

Episode Transcript
How the River Flows Podcast

Season I, Episode I

What We've Learned About Long-Term Investments in Water: A conversation with Margaret Walls

Carlton Owen, Host
Kevin McIntyre, Co-Host

Release Date: 18 March 2021

About the Podcast Series



How the River Flows explores the relationship between healthy forests and clean drinking water.

You'll hear from entrepreneurs and experts who will share their best ideas about conserving local forests while ensuring a lasting, clean supply of drinking water downstream.

In each episode, we'll bring you a new take on how local communities are financing the forest stewardship that is providing our clean water and how landowners can be financially compensated for the tremendous environmental value that their working forests provide to everyone.

How the River Flows is produced by Keeping Forests with Lee Schneider and supported by the USDA Forest Service and US Endowment for Forestry and Communities. The Endowment works collaboratively with partners in the public and private sectors to identify innovative and transformative ways to support the health and vitality of our forests and the communities that rely on them. Music by Chuck Leavell. Executive Producer: Judy A. Takats.

Episode Summary

Kevin McIntyre and Dr. Margaret A. Walls discuss how forests naturally reduce flooding, how better-managed forests contribute to higher water quality, and how providing landowner incentives and creating robust markets for forest products is a win-win situation for water consumers and landowners.

Carlton Owen:

I'm Carlton Owen, immediate past President and CEO of the US Endowment for Forestry and Communities, and a proud supporter of Keeping Forest.

Carlton Owen:

Keeping Forest is the producer of this podcast called How the River Flows. Keeping Forest is built on a powerful and simple idea; to ensure that our regions' forests have a future. We're working hard to conserve the 245 million acres of existing forest by supporting private land owners, shedding light on what in land matters and showing what you can do to help.

Carlton Owen:

Every episode of How the River Flows, we'll take a close look at the relationship between healthy forest and clean drinking water. Our experts will share their best ideas along with specific examples about conserving local forests to ensure a lasting clean supply of drinking water to meet local needs. Each time we'll bring you a new take on how landowners can be compensated for the tremendous environmental value that the working forest provides to everyone. You'll learn how these innovations are financed, managed and even how your local community can join the effort in protecting our precious southern forests and the many benefits including clean water that they provide. So sit back and enjoy this episode of How the River Flows.

Kevin McIntyre:

Thanks Carlton.

Kevin McIntyre:

Hi. I'm Kevin McIntyre and I'm the Education Coordinator at the Jones Center at Ichauway. In this episode of How the River Flows we'll be covering lessons learned from implementing the ecosystem services projects. My guest today is Dr. Margaret A. Walls. Dr. Walls is an economist and a Senior Fellow at Resources for the Future. She's a specialist in conservation and ecosystem services. Dr. Wall's research has focused on natural disasters, such as floods and wildfires and finding cost effective solutions for building resilience to those disasters.

Kevin McIntyre:

Dr. Walls, welcome to the podcast.

Dr. Margaret A. Walls:

Thank you, Kevin. It's great to be here.

Kevin McIntyre:

Let's start by asking you, what does the term ecosystem services mean to you?

Dr. Margaret A. Walls:

Ecosystem services is a term that scientists developed a few years ago or several years ago now that really describes the benefits and values that we get from nature. I like to think of ecosystem services as the output of dangerous production function, if you will. We all know that we get value from nature. We know that every time we're in nature and we enjoy it, but I think the term ecosystem services is a way to make those benefits more specific. We know that for example, forested lands provide a whole host of water benefits; filtration, and storage of water that reduces flooding and improves water quality. And those are the kinds of things we mean by ecosystem services or that's what I think of. So they're values and benefits, but we're trying to be a little more precise and think about them like in a production function framework.



Kevin McIntyre:

You mentioned the forest's important role and things like enhancing quantity and quality of freshwater resources. Can you talk a little bit about the concept of compensating private land owners, forest land owners, for maintaining these resources or what we call payment for watershed services?

Dr. Margaret A. Walls:

Payment for watershed services or the broader term that often gets used is payments for ecosystem services is the idea, as you said, of providing incentives to land owners to provide these nature-based services from their lands. So the notion is if you give a landowner a financial incentive, then they will produce more of those just like in a private market. So in a sense, the payment for ecosystem services or watershed services idea is really trying to mimic what private markets do. We have beneficiaries of services and those beneficiaries pay the providers of the services. That's the general notion that's at play. So it's the idea of creating a market.

Dr. Margaret A. Walls:

And you might ask, why do we need to create a market? Well for a forest, obviously, a forest produces timber and timber products, and there are markets for those, but there aren't markets for things like clean water. If the forest is filtering the water and creating clean streams or streams that feed into drinking water systems, it's much easier and cheaper to produce that clean water for drinking. That's a service that those landowners are providing that they're not compensated for. And it's hard to do that because they can't individually go out and say, "Hey, pay me you water consumers for this great water that I just provided you," because that's not going to happen. So the notion of payment for watershed services is to try to set up something to do that.

Kevin McIntyre:

A couple of years ago, you published a really great paper in the Journal of Water, Economics and Policy in which you reviewed, I think, 15 different payments for watershed services programs in the US. Can you share some of the take home messages from that review? I mean, what motivates a water utility or a municipality to start one of these programs?

Dr. Margaret A. Walls:

That was one of the main questions we looked at in the study. I think the first take home message from that paper is just that these programs are out there. In the US there's been in the scholarly literature, peer reviewed literature, more of a focus on international programs, programs in developing countries. I think it was good to document what's going on in the US. And we actually found quite a few more than 15 programs. We just found 15 where we could find adequate data and information to evaluate them.

Dr. Margaret A. Walls:

In terms of what motivates them, I think that was another major finding. In a broad sense, what motivates a lot of these programs are regulatory drivers. Our drinking water systems have to meet standards. There are surface water quality standards for our streams and rivers. Those things they motivate local governments, water utilities, and others to actually invest in a bunch of different ways to make those things happen. One of those is forest conservation, forest management practices, forest restoration. So in a broad sense, the regulations are driving things.

Dr. Margaret A. Walls:

In a more specific sense, we found there's a lot of things going on in different locations. In some locations there would be development pressures at work that might be leading the



forest to get cut down. And if that were to happen, that would have water quality implications. So it all goes back to the desire to have the clean water, but there are different pressures in different settings. Development pressures were at play. In some cases they're sort of co-benefits from retaining the forest.

Dr. Margaret A. Walls:

For example, if you want to protect a headwaters forest for drinking water purposes, and that's your main motivation, you're also going to get clean stream. So your surface water is going to improve. So you're sort of getting both things. You might have recreation co-benefits. You could have wildlife habitat. A lot of those kinds of things come into play. There's so many benefits from the forest beyond just the one single thing. Wildfires were a big deal in some Western locations, and that's been a motivator in several locations.

Dr. Margaret A. Walls:

Another thing that I mentioned, the regulations drive, is a lot of these drinking water utilities are municipalities that run drinking water systems have aging infrastructure. They have outdated treatment technologies. They have filtration capacity issues. And so one of the alternatives, again, to updating those systems, might be protecting a forest so that you have cleaner water coming into the system. You don't need to invest in those extra gray technologies because you've invested in the green.

Dr. Margaret A. Walls:

So there's a set of things going on I think. All of which are kind of related to keeping your costs down, meeting your regulatory requirements,

Kevin McIntyre:

What factors are considered in these programs in terms of placing a value on the privately held forest land, and specifically the value of the services provided by these forest lands related to water?

Dr. Margaret A. Walls:

One of the things we tried to take a careful look at as economists was what did determine the payments that the forest owners got and what determined the prices that the beneficiaries of those watershed services were paying? In many of these programs, not all of them, but in many, you have a drinking water utility, and they are assessing a little fee on the water consumers that are paying their water bills, and they're using that money and paying forest landowners maybe for a conservation easement or another measure.

Dr. Margaret A. Walls:

We've spent quite a bit of time trying to disentangle what explained the magnitudes of those things, both the payment to the forest owners and the charges to the water consumers. What we concluded was really the two aren't very linked and the forest owner payments are really depending quite a bit on opportunity costs of that land. So if you're a landowner and somebody's coming to you and offering to put an easement on your land, whether you'll accept that payment, and I'm sure many of the listeners know this, whether you'll accept that payment depends on what the value is in its next best use. So there has to be an adequate payment, and that's why you see the payments varying quite a bit across the programs. There has to be an adequate payment for a forest owner to do that.

Dr. Margaret A. Walls:

On the flip side for the water utility, what we found is that the payments that consumers are making, our sense was it was kind of what the utility could do without having an uproar from consumers. And also this notion that they were doing this instead of investing in some



kind of additional infrastructure. So they had a maximum they would assess because they could do it a different way rather than pay for the forest preservation or conservation.

Dr. Margaret A. Walls:

So there were two things at play in these programs.

Kevin McIntyre:

Now you mentioned conservation easements. What other mechanisms are used to compensate land owners? Do you see these programs actually purchasing land, or maybe making shorter term agreements with land owners?

Dr. Margaret A. Walls:

There's a few of both. There definitely were purchases of land in some of these programs. They're also easements. In the wildfire programs that I mentioned, several of those programs I have water utilities paying the US Forest Service to do treatment on the land. So that's actually compensating for fire management practices.

Dr. Margaret A. Walls:

So there's a host of different things. I would say that the purchases on the easements were the most common that we found in the programs we looked at.

Kevin McIntyre:

The payments that the utility customers make with their water bill can add up and represent a significant investment. Can you tell us a little bit about the concepts of conditionality and additionality? In other words, what are you getting for that payment?

Dr. Margaret A. Walls:

If I could, I want to make one point Kevin, to your point about the money adding up. One advantage of these programs where you are having utility customers pay is you can spread that across a wide set of customers, so each customer is not actually paying that much additional in their own bill. And you can generate, as you say, quite a significant amount of money. That's the good side of these kinds of programs. Another point here to make about payment for water services programs, the idea here is you're getting the beneficiaries to pay. So you're not trying to use general fund revenues from the government or something like that. You're trying to generate a pot of money to pay for those services.

Dr. Margaret A. Walls:

The conditionality and additionality issues, those are kind of technical terms, but really pretty simple concepts. For conditionality, what you're saying is you want these payments to be conditional on the landowner undertaking some action. So it's fairly straightforward with an easement. You're just paying for the easement and the easement sets out the terms; the land has to stay in forested use, it can't be developed and so forth. Easements are very common. So that would be a condition of getting the payment as you enter the easement. In terms of fire treatment, the condition would be maybe harder to measure in those situations, but you would have to undertake particular activities and then that's what you get paid for. So the notion is it's a conditional payment; you have to do something to get it.

Dr. Margaret A. Walls:

The additionality idea is a little bit less important, I'll say that. It is to try to get additional services provided above and beyond what the land owner would do otherwise. So if you think that you have a forest that isn't going anywhere and it's providing watershed services, do you actually need to pay the land owner by having him or her put that in an easement? That's a little bit of a trickier question. You don't know exactly what they're going to do with



their land, so it's hard. I think the idea here is that you want to be careful not to pay somebody for something they're doing anyway. Having said that, it's a little tricky that additionality concept.

Kevin McIntyre:

Your paper mentioned some areas that were ripe for future research, maybe on the social and economic fronts, that could help refine both the existing and future programs. I'm curious what you see as the most needed information to facilitate further development of this concept.

Dr. Margaret A. Walls:

Well, I think as I mentioned at the beginning, we tallied up about 40 programs, but we could find very little information. We know they're out there. We don't know how many acres of land they're affecting or conserving. We don't know how much they're paying for that land protection. We don't know where the money's coming from. It's very hard for some of the programs to actually get the information to evaluate them. I think if we could do good program evaluation then you'll start to number one, set the programs up better, or in the best way possible. You might have more of this going on. If you could have good program evaluations and everybody can understand and learn from each other, then you can have this become a more common approach to forest conservation and getting watershed services provided.

Dr. Margaret A. Walls:

I think we were disappointed to not be able to find more data and information available on the programs and that's step number one. And then I would say evaluation of the costs and benefits. What you'd like to know, and I've been in many conversations where people talk about this, you'd like to know when I protect this forest or this additional acre, what is the additional benefit I'm getting in terms of clean water? In a hydrologically complex setting it's a very difficult question to answer. It's going to be different in every location. So that is tricky, and I don't see a lot of literature that's really linking that.

Dr. Margaret A. Walls:

I've been in conversations where particular, let's say private industry, people hope that they could get private industry who are big water users to provide funds to protect the forest that provide the clean water, but they often want that hard information. They want to know if I pony up with this amount of money, what's the additional benefit I'm getting, and I think that's very difficult.

Dr. Margaret A. Walls:

What I think from my point of view we need is maybe not so much that, but just monitoring over time as these programs are set up, and then a bit of being able to compare across locations. I think then you would learn ... We do this all the time as economists; we use data that is available. We don't have to go to one specific, tiny location. We look across programs and do a program about evaluation of before and after, compared to places that aren't protecting the forest, to places that are, and do that, but you have to have the data and information.

Dr. Margaret A. Walls:

I think one of the things that we came out of this with is more program evaluation and the better data to do that.

Kevin McIntyre:

That really leads me to my next question. It seems like many of these programs got started in the late 1990s, early 2000s, and so they've been going for a while. Love to hear your



thoughts on how these programs have evolved over the years and where you see them going.

Dr. Margaret A. Walls:

To be honest, I can't evaluate exactly how they've evolved over the years because of this lack of information. We didn't try to do that. We tried to get the information at the time we did the study. From what we could tell, a fair amount of support for these programs, some of them are actually ... we've talked about water utilities, but some of them are tax-based and they often have referenda and people vote and they tend to be pretty popular programs. So they've kept them around for a while. A lot of them have been around for quite a while. We saw actually more of them coming into existence as time went on in the mid-2000s and so forth. I think they're starting to be recognized as a pretty effective program, cost-effective too.

Dr. Margaret A. Walls:

I can't say exactly how each individual program has evolved, but we could see from our work that there was good support. You didn't find programs that came into existence and then dropped, and you saw active re-upping on some of these programs.

Kevin McIntyre:

That was a question your comment planted in my mind. You mentioned that some of these were approved by a voter referendum. I was curious whether any of them had come up for re-approval. In other words, did they really resonate with people and did they continue to support them?

Dr. Margaret A. Walls:

I think that's the case in the Texas ones that we looked at. San Antonio has had a long time program to protect the Edwards Aquifer, which supplies water to San Antonio and Austin actually. I believe that San Antonio one that's one that's gone up to voters and is tax-based, and it's been around for a while.

Kevin McIntyre:

Margaret, what do you see as the biggest information gap that we need to fill to encourage more of these programs?

Dr. Margaret A. Walls:

Well, it's a good point you're bringing up. I think researchers always say, just need more data and more research. I don't know. Let me just riff for a minute. I think we need to know what we're getting for the money we're spending and we're not really able to evaluate that. We'd like to know how cost effective these programs are and what determines how cost effective they are, because they're all different, they're in different locations. If we could learn that, then other programs might get set up. We want to be a cheerleader for these programs, I do, but we can't be cheerleaders without being able to really have our hard facts. So what do we need? We need to know how cost effective they are, and it's very hard to evaluate that. What is the bang for the buck?

Kevin McIntyre:

You did your undergraduate work in Kentucky, and Keeping Forest is a South Eastern focus program. So we're curious, how did that experience shape your?

Dr. Margaret A. Walls:

Yeah, I went to University of Kentucky because that was our flagship school. Go Big Blue. I grew up in a small town on the Ohio River. I think I was outdoors every single day. It was a



rural ag-based economy. That probably shaped me because I'm a great lover of nature. All my work is related to conservation related issues; a lot of public lands work, a lot of ecosystem services work. So maybe that came from spending all my summer days is on the banks of the Ohio River playing in the backyard and so forth.

Kevin McIntyre:

Can you talk about what factors you consider when placing a dollar value on land?

Dr. Margaret A. Walls:

Well, I think again, that what we found and this makes intuitive sense to me is what is the value of that land and its next best use or in its use? So if a hundred acre parcel forested land is ripe for development I'm going to look at the value of that land and development as the true value of the land. That's when it becomes tricky to protect that forest, if that's what your objective is because the land owner in most cases, it's going to need something close to that in order to maintain it as a forest.

Dr. Margaret A. Walls:

I think land markets work fairly well for the most part, especially in areas where the land is being developed so we can use that as a guide. That's generally how I tend to think about it.

Kevin McIntyre:

So just general principles of land appraisal, basically?

Dr. Margaret A. Walls:

Yeah, general principles of land appraisal would be right. Yeah.

Dr. Margaret A. Walls:

One last point I wanted to just emphasize about. This is an environmental problem. We want to get these clean water services provided. And this notion of the payment for watershed services program, I want to be clear, means we are trying to find the beneficiaries and having them pay the providers of the service. There's a lot of easement programs. The government buys easements all the time. But that isn't really linking the beneficiaries directly. So it's this notion of trying to create the market. That's hard to do it. It isn't the panacea. It isn't something that you want to do everywhere.

Dr. Margaret A. Walls:

It seems that in this case for the watershed services provided from a forest is a really nice application of this though, because we have water utilities, they have to meet standards, they have a lot of consumers, they can send them a bill every month. It's kind of a perfect setup, I think, as perfect as we might find. So it would be great to see more of these programs.

Kevin McIntyre:

One thing I'm curious about Margaret, do you ever see these programs trying to leverage other uses of the land beyond their water production function? For instance, I think of the value of streamside forest and streamside buffers. Do you see programs that are using say recreational values or supporting healthy fisheries as selling points for these programs?

Dr. Margaret A. Walls:

Oh, absolutely, yes. The multiple benefits part is a really big thing and I think a big motivator. I think I mentioned earlier co-benefits but kind of went over it quickly. I think



basically the clean surface water, drinking water, the habitat, the recreational benefits. And carbon, I mean, we haven't even spoken about that.

Dr. Margaret A. Walls:

Kevin, I think we talked about this earlier, that there's a notion of stacking payments for ecosystem services because forest do produce a variety of valuable environmental benefits and how can we figure out a way to compensate for all those good things that the forest provides? I think that's an active area of research that needs more research and is a little tricky because you don't want to double pay. But yeah, absolutely. I think the motivation in some of these programs was definitely that.

Kevin McIntyre:

Great.

Kevin McIntyre:

I want to thank Dr. Margaret Walls for her part in this episode.

Kevin McIntyre:

This is Kevin McIntyre from the Jones Center at Ichauway for Keeping Forest, a diverse coalition conserving the natural economic and cultural value of southern forests.

Kevin McIntyre:

The music in this podcast is courtesy of Chuck Lavelle.

Carlton Owen:

I want to thank everyone for tuning into How the River Flows. Join us next time as we explore the connections between healthy forests and clean water and see how others have built a partnership that benefits all.

Carlton Owen:

You can listen to How the River Flows on Apple podcasts, Spotify, or wherever you listen to podcasts.

Carlton Owen:

I'm Carlton Owen.

