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Sheila Olmstead: So, there's not a really strong correlation between where the supply is scarce and where the price is high. And that puts those regions in a very difficult situation of having essentially, through the water prices, encouraged the kinds of development that are thirsty.

Rob Stavins: Welcome to Environmental Insights, a podcast from the Harvard Environmental Economics Program. I'm your host, Rob Stavins, a professor at the Harvard Kennedy School and director of the Harvard Environmental Economics Program and the Harvard Project on Climate Agreements. As listeners of these podcast episodes certainly know, I engage in conversation with leading experts from academia, private industry, government, and NGO's, with our focus always on environmental economics and policy. And today we're very fortunate to have with us, someone who has had broad experience working in multiple sectors in academia, in a leading think tank, and in government, on a variety of environmental issues, always from an economic perspective.

Rob Stavins: And I'm referring to my longtime colleague, friend and former student, Sheila Olmstead, who is a professor at the Lyndon Baines Johnson School of Public Affairs at the University of Texas, Austin, a University fellow of Resources for the Future, a member of the Science Advisory Board of the US Environmental Protection Agency. And now the editor of the Journal of the Association of Environmental and Resource Economists. If that weren't enough, I'll also take note of the fact that she was previously senior economist for energy and environment at the President's Council of Economic Advisors, a senior fellow at Resources for the Future and an assistant, and then associate professor of Environmental Economics at the Yale School of Forestry and Environmental Studies. Sheila, welcome to Environmental Insights.

Sheila Olmstead: Thanks, Rob. Thanks so much for that kind introduction.

Rob Stavins: So, I'm very interested to hear your thoughts about the economic dimensions of environmental policy, including your specialization, the economics of water quantity and water quality policies. But before we talk about that, as our listeners know, I always like to go back to where you came from and where you've been and how you came to be in the position you are. And when I say go back, I do mean go way back. So let's start, where did you grow up?

Sheila Olmstead: So I grew up in a bunch of different places. It's always hard to answer the question, where are you from? Because I'm from many different places. I was

born in Lansing, Michigan. We moved before I started school, to Chicago, Illinois. And then when I was in first grade, moved to Brussels, Belgium. When I was in fourth grade, moved to a suburb of Fort Lauderdale, Florida, and that's where I graduated from high school. My parents moved shortly after I graduated. So I went to college at the University of Virginia, in Charlottesville, Virginia. My parents were overseas again during that time. And then they ended up back here in Austin, Texas. So I've spent some time in and around Austin for a long time, before I moved here in 2013.

Rob Stavins: Now that sounds like one or both of your parents were either academics or in the military, or is that not the explanation?

Sheila Olmstead: That is not the explanation. So my father was a sort of a sales manager and then a marketing manager for a company that sold medical supplies. And my mother was a nurse, and so she worked in most, but not all of the places that we lived.

Rob Stavins: I see. So you graduate high school and then you go to college at University of Virginia. Is that right?

Sheila Olmstead: UVA. That's right.

Rob Stavins: And what'd you study there?

Sheila Olmstead: I studied political and social thought. My parents were very encouraging, but I think in a way it was much to their chagrin that I chose what was essentially a political theory major. And I loved it. I think I went there interested in studying what they would have called at the time at UVA, foreign affairs, something maybe other universities might call international relations. And I found those classes really interesting, but I was just more intellectually engaged by my teachers in political theory. And so sort of mixture of philosophy, history, deep reading of both fiction and nonfiction texts. It was an exciting time in my life. And I feel like I got a great broad-based liberal arts education there, at UVA.

Rob Stavins: Yeah. I'm all in favor of liberal arts education. My degree is in philosophy, which is even more abstract and theoretical. So that sounds like a very good foundation though, for then what you did next, I believe, which was at least in terms of schooling, which was the MPA degree at the LBJ School.

Sheila Olmstead: Yeah, that's right. So first I went to work in Washington, DC, as many graduates of the University of Virginia do. It's a natural destination. Most of my roommates had been from Northern Virginia and had spent time in DC or had ambitions to work in DC. And so I did that for a couple of years and then looked to graduate school in public policy. And that was a little fluky. I was a temp at the World Bank and I was working in the Southern Africa infrastructure section. And I was working with some folks who had been to the Kennedy School and other public policy programs and recommended to me that I look into master’s

in public policy programs. And so I did, and I looked at a lot of them. At the time my father was sick.

Sheila Olmstead: He had a type of leukemia. And so, my choice was to go to the LBJ School and really, it changed my life. It was one of those many moments in my life I always tell students, life is long, and if you follow your nose and try to make the best decisions you can, based on both your own personal desires and your professional ambitions, if you combine those two things in a way that's comfortable for you, you can just end up in the right place at the right time. And I think for me, the LBJ School was the right place at the right time.

Rob Stavins: And I hope that your next stop at Harvard for the PhD in Public Policy was also a right place at the right time. But tell me if it's otherwise.

Sheila Olmstead: Also changed my life. No, it was amazing. So while I was a master's student, I was juggling this really challenging situation of having a difficult family situation and helping my mother essentially as one of my father's primary caregivers. But also made some of the best friends of my life and started studying things. The reason I say it changed my life is again, I came there with this general interest in foreign affairs and international relations and started out on that track. I got an internship in Baku, Azerbaijan, with the State Department for the summer, between my two years and ended up, my father's health situation declined pretty dramatically and unexpectedly. And so I ended up having to cancel that and just sort of scrape around for, okay, what internships are left here in the summer in Austin that I can possibly find. And I landed one at what was then, the Texas Natural Resource Conservation Commission, or the TNRCC, which was affectionately called, or maybe not affectionately called “Train Wreck” at the time.

Sheila Olmstead: It's now called the Texas Council on Environmental Quality. And I started working with Steve Niemeyer, a colleague who just recently left there actually, and some others in the Border Affairs division and working on, what they did is they sort of sent me down to the Border region to understand what the infrastructure needs were in these border communities called “colonias,” which are communities on the Texas... There are also communities like this on the Mexican side of the border, as well as in other US states, but Texas has the large majority of them, more than a thousand communities with what one would consider substandard infrastructure services of all kinds – drinking water, wastewater, school bus service, roads, trash pickup, almost everything in these fairly substandard housing developments.

Rob Stavins: When you came to Harvard, you already had an interest in water, as I recall.

Sheila Olmstead: That's right. Yeah. My general interest in environmental policy altogether came from that, what was in a way, a fluky experience, but was just so incredibly enriching. I just couldn't stop thinking about this problem that we have, an incredibly wealthy country, definitely a water scarce state. Texas ranges from semi-arid to arid, but a lot of the most severe problems of access to drinking

water at the time, that's gotten much better, but certainly still sanitation, were in the more humid parts of the state where water supply is not an ongoing major problem. And I found that just fascinating and a sort of set of problems that I hadn't really thought about. And it was terrific for me.

Rob Stavins: And you completed the PhD in Public Policy at Harvard in 2002, having done a great dissertation, which was in fact on urban water demand, water pricing. Is that right?

Sheila Olmstead: That's correct. Yeah.

Rob Stavins: So what was your first job out of school?

Sheila Olmstead: My first job out of my PhD program, was at Yale. So I took a job as an assistant professor at, what was then the Yale School of Forestry, now has a much broader name, School of the Environment. And that was also a great fit. I feel incredibly lucky. I've had these wonderful jobs, really none of which I can complain about. They all really grew me in different ways. I was obviously an assistant professor. I was teaching. So I was teaching environmental economics, natural resource economics, and some advanced seminars. And then I was doing research in an environment that was just fantastic. I had colleagues like Chris Timmins and Erin Mansur and Nat Keohane and others that were just really fun. Rob Mendelson, fun to work with and present papers to. Bill Nordhaus is another one. So that was a terrific time also, it was also the time in my life I was having my first couple of kids and so my family life was exciting and changing rapidly. So I looked back on that time as particularly fondly as well.

Rob Stavins: So you stayed there until 2007, then went to RFF. My recollection is for family reasons, you wanted to relocate to Washington. And then from RFF, you went home again to the LBJ School. Is that right?

Sheila Olmstead: Yeah. That was really, again, fluky and lucky. I had at the time, my spouse, my husband, Todd is also an academic. And so, as you know, that's a tricky situation for two professionals to handle sometimes. It can be hard to find two wonderful academic jobs in the same city. And we were both happy in Washington DC, but this opportunity came up. It was actually an opportunity for him. So, I was the spousal hire or again, sometimes lovingly called the quote, “trailing spouse,” coming to UT Austin. And so, yeah, we picked up, I had just had my third kid and we picked up and moved from DC back here. I've missed my colleagues at RFF, that was also a wonderful experience for me, but it's also been nice to be back home here. My mother is here and for other reasons, Austin feels a lot like home.

Rob Stavins: That's great. And then while you're at the LBJ School, you took a leave of absence to go to the Council of Economic Advisors as a senior staff economist. Now we get to the fun stuff, Sheila, you were there during the transition from the Obama to the Trump Administration. What the heck was that like?

Sheila Olmstead: It was insane. Yeah. It was one of those things. This is a position, as probably many of our listeners know, that typically is a one-year position. So the federal government essentially draws up a contract and it pays your university. You can be an environmental economist, public finance, all different fields, macro, and the CEA is always looking for senior economists to staff these positions who are willing to spend essentially one academic year there. And so you take that job. I think Jason Furman, my chair, who's one of your wonderful colleagues at the Kennedy School, probably made me an offer in February, if I'm remembering this right, might've been slightly later than that, of 2016. And at the time, we knew there was an election coming up, but my assumption was that there would either be sort of a President Hillary Clinton or a president, someone, a moderate Republican of some kind that was, a lot of the field looked like that at the time.

Rob Stavins: A reasonable assumption.

Sheila Olmstead: And then I recall driving, also. I've spent some time and really enjoy an affiliation that I have with the Property and Environment Research Center in Bozeman, Montana. And so my family and I have been up there for several summers, and driving up there the summer before I started at CEA, I didn't start with them. I started long distance in June and then started officially in mid-August. We were seeing a lot more Trump Pence signs than we were Clinton signs. And so I started to have this sinking feeling that something might turn out differently than I had anticipated and arguing with myself and thinking through, okay, how will this go if things turn out that way?

Sheila Olmstead: And then they did. I was there and busy, as President Obama used to say, kind of “running through the tape" with the team at CEA and trying to put the finishing touches on some important achievements, especially with respect to climate change. Things like the Kigali Agreement was in process at the time. Worrying about whether the CAFE standards and other key elements of the administration's approach to meeting its ambitious greenhouse gas emissions reduction goals were going to work out. And then we had an election in November that surprised many, many people, including folks in the White House. So that was 180 degree shift in what the environmental priorities of the administration were.

Rob Stavins: So what did you work on at CEA, climate, water?

Sheila Olmstead: It's interesting because while I was there, climate was the big, big focus. There are a few things that came through that were a little closer to my natural wheelhouse, things that I had been working on in my own research, but I fully anticipated that that was how it was going to be. Obvious I talked with folks who were there already and with Jason, and then the other thing that is interesting is that, well, while Jason Furman was the chair, his two members, the other two political appointees at the CEA, were Sandy Black and Jay Shambaugh, and each senior economist reported for the most part, to one of them.

Sheila Olmstead: And the environment energy person reported to Jay. And so Jay is a macroeconomist, and so his thinking and our thinking and the work that we were able to do together was mostly about focusing on these kinds of macro issues with respect to climate change and, communicating about what the economic impacts of doing nothing would be, relative to taking some of the more ambitious targets that the administration was promoting. And so partly as a result of those sort of structure, the administrative structure of the CEA at the time, and partly because that was what was on the agenda at this tail end of the Obama, two terms, that's what I focused on mostly.

Rob Stavins: Now, recently, very recently, you've once again entered government services, although from the outside, by joining the Science Advisory Board of the US Environmental Protection Agency. What's happening at the Science Advisory Board? It had also changed quite a bit.

Sheila Olmstead: Yes. It had changed quite a bit. And actually, I feel like I almost got caught in the sort of squeezed play there on the Science Advisory Board. So, I actually was asked at the very end of the Trump Administration, and so I'm thinking it had to be post-election, December of 2020 by, I guess it was Andrew Wheeler, who was the EPA Administrator at the time to serve. And I thought, well, this is unusual. Because, one thing just as a little background, the Trump Administration had been criticized for, the perception was stacking the deck on the Science Advisory Board, asking a number of high profile, accomplished academics to leave, and then bringing in a lot of folks from industry and other academics that were perceived to be potentially more sympathetic to a deregulatory agenda.

Sheila Olmstead: So in any case, they made some changes at the very end of the year. I was appointed. My term officially started in January of 2021. And then we all got a letter saying that the new EPA administrator under President Biden was going to reconstitute the whole SAB. So, I wasn't sure if I would make it through to the next round, but I was really grateful that I did. I'm excited about the work. I only have a vague sense so far of what I'm going to be working on, because we're kind of just getting up and started. They've gotten all these appointments processed now, but I'm very excited about the other folks that are appointed, in particular, my environmental economist colleagues like Dave Kaiser and Lala Ma. The folks that, some of whom I've already worked with and others of whom I certainly know.

Rob Stavins: Does the Environmental Economics Advisory Committee still exists, is that what you're on?

Sheila Olmstead: It does, it has a slightly different name, but yes, the Economic Analysis Committee or something like that. But yeah, that's the name...

Rob Stavins: So, I chaired that quite a while ago, who chairs it now?

Sheila Olmstead: We don't have a chair. And so I'm not sure whether that means that we won't, that's just how the structure is going to be, or whether that's something...

Rob Stavins: Or you may get a phone call any day, Sheila. I think is what's going to happen.

Sheila Olmstead: It is maybe something that's a little further down the road. But I'm really looking forward to it. My work on regulation has been among the most rewarding work that I've done. So I'm really looking forward to that.

Rob Stavins: It's also true that, given the nature of what EPA is responsible for across the board, if you look at the whole list of statutes and regulations, the Science Advisory Board, at least during my tenure there, which lasted a good 10 years if not more as a member and then chair, tends to focus a lot more on you spend time on issues of water quality than one does on climate change, per se. So you may find it a wonderful experience in that regard.

Sheila Olmstead: I hope so, yeah.

Rob Stavins: So, let's turn to the economic dimensions of environmental policy. As we've said, much of your research has focused on water resources. I think both from the water quantity perspective in terms of demand, and then the water quality perspective, sometimes supply, but perhaps also demand. Can you tell us which parts of the United States, if it's specific regions, states, or cities, stand out as being best or worst in regard to water quantity management, including water pricing, as one approach to managing water quantity and demand?

Sheila Olmstead: Oh, that's such a hard question. What I would say is that the western United States, the more arid parts of the United States, so some the of arid and semi-arid states struggle more. They're also high growth states, many of them. And so they struggle more with how to meet especially urban demand, given concerns about the natural supply. And that gets even more interesting as we look to the future, with the climate changing as it is. And so there's been a fair amount of attention to that. The Eastern states, the more humid states, also struggle a bit with this, there are certain parts of the country in particular, where there are these interstate conflicts over river basins and how much water is available, but they have less of an ongoing problem of scarcity.

Sheila Olmstead: Scarcity there is more a story of a particularly dry summer, for example, or restrictions on withdrawal due to regulations under the Endangered Species Act. So the very sort of specific cases, and that's not to say that they're not important, but generally the west has a greater set of challenges there. And the hard thing to look at as an economist is that you would expect them, that all else equal, prices would be higher in Western states. And in some cases that's true. You look at high-profile cities like Los Angeles, Austin even, water rates, especially for the higher levels of use in the summertime are really quite high, compared to the average.

Sheila Olmstead: But it's not true as a whole, across the west. There's still plenty of places like Phoenix, but desert climate, for all intents and purposes, where water prices are pretty low. So there's not a really strong correlation between where the supply is scarce and where the price is high. And that puts those regions in a very difficult situation of having essentially through the water prices encouraged the kinds of development that are thirsty, without having the tools in the long run to meet that demand.

Rob Stavins: So is there a trend over time? It's approximately 20 years since you, Michael Hanemann, and I worked together on these issues, then I did a bit separately from that with you, but I have not kept up. So is there a trend in terms of the number of municipalities or utilities which use water pricing as a management tool, or is has been going the other direction or is it sort of static?

Sheila Olmstead: I would say it's fairly static and unfortunately, the ground is moving under their feet. So now, if you're in California, you might be particularly concerned about reservoirs that in the long run, major reservoirs, that in the long run are not going to be supplying the kinds of quantities that they have in the past. And so even if things were improving, I don't know that we could say they're improving at a pace that's keeping up with that kind of change.

Rob Stavins: Do you know where the United States stands compared to other countries in the world on water, quantity management, including, but not necessarily using pricing mechanisms intelligently?

Sheila Olmstead: I would say that in the agricultural sector, everyone does poorly, the United States is no better than anyone else in the sense that most agricultural water use isn't priced at all. Obviously farmers have to pay the costs of pumping water and bringing it through either canals or different kinds of irrigation systems, but they don't actually pay per unit of water that they withdraw from a raw source. And that has really significant implications for the ability to use prices to manage demand. It's not even metered for the most part. So I would say we're really no different than other countries in that sector. Probably, we're somewhat better in the urban sector, that's a little speculative on my part. I can remember making a presentation a long time ago with some OECD data and saying, "Hey, it doesn't look like we're any worse for sure." But I can't be more precise than that.

Rob Stavins: If we were talking instead though, about water quality management, then I would think, I don't know, you tell me if I'm wrong, please, Sheila. I would think that the US would rank fairly high in terms of water quality management is that right?

Sheila Olmstead: I would say that that's correct. So we have the main tool for addressing ambient water quality issues. So that is not piped drinking water, but rivers and streams and lakes, is the Clean Water Act. The Clean Water Act set up some very ambitious goals, in terms of the economics of it, we would probably say too ambitious in the sense of a goal of driving emissions to raw water down to zero

by the 1980s, which obviously we haven't achieved. So lots of people have been critical of that, but partly because that was so ambitious, and the country then has been striving toward these pretty stringent goals.

Sheila Olmstead: We do quite well certainly relative to developing countries. One of the big challenges that we have is that, some of our most severe remaining water pollution problems in the United States, the story is very much like air pollution. Gosh, we're so much better than we were in the 1970s. The Cuyahoga River doesn't catch on fire and so on, but our remaining major water quality challenges have mostly to do with agricultural water pollution, urban runoff. And these are not things that were well addressed in the structure of the Clean Water Act. And so, we just continue to struggle what the fact that these are really severe remaining problems, and some of them are essentially unregulated.

Rob Stavins: Now something that's really changed, I think dramatically over the last several years, both within environmental economics and environmental policy, is much greater attention to what is typically labeled, environmental justice, largely, the distributional impacts of environmental problems and the distributional impacts of environmental policies across income groups, people of color, on and on. And in the water area, certainly the tragedy in Flint, Michigan with the water contamination from old lead pipes brought a lot of attention to this. Are we seeing significant change for the better?

Sheila Olmstead: I would say yes. Even in the recent infrastructure package that's being debated in the Congress, there are funds in there for helping with the replacement of lead pipes, for example. And so, one thing I think the environmental economics literature has really contributed to is showing just how strongly negative the impacts are of things like exposure to lead in drinking water. I have a PhD student who just started a post-doc at the University of Illinois, Urbana Champagne, Jiameng Zheng, who, her job market paper focuses on this issue. Even if we look at levels of exposure below what we would think of what the Safe Drinking Water Act is labeled as a critical action level, you can still see very severe impacts of lead exposure in, at especially between ages zero to five on things like third grade test scores, the likelihood of high school graduation.

Sheila Olmstead: We, we've been tracking this long enough now that she's starting to look at labor force outcomes later into someone's twenties and thirties. And just like on the air pollution side, we can see that those effects are really severe, and negative. And so I think there's both increased attention to it in terms of research. And right now we're starting to see more movement. Now, the thing that's so disappointing, is that the quote, “crisis in Flint,” we think of it as something that, "Oh, that happened several years ago." But really, it's just a rolling crisis, that once those pipes are there and they're leaching lead, it just continues to be a problem for those households.

Rob Stavins: Well, I think one thing that's likely is, given the high priority that's given to environmental justice in the Biden Administration's EPA, you're likely at the

Science Advisory Board to have an opportunity to delve into, and to provide some real insights to the administrator on these issues going forward.

Sheila Olmstead: I hope that's right.

Rob Stavins: So we'll end with that, Sheila. Thank you very much for taking time to join us today.

Sheila Olmstead: It was fun. Thanks so much for having me.

Rob Stavins: So thanks again to our guest today, Sheila Olmstead, professor at the Lyndon Baines Johnson School of Public Affairs at the University of Texas, Austin. Please join us for the next episode of Environmental Insights: Conversations on Policy and Practice from the Harvard Environmental Economics Program. I'm your host, Rob Stavins. Thanks for listening.

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