Two Stories That Prove Change Is Possible

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Ariana Brocious: I'm Ariana Brocious.

Kousha Navidar: I'm Kousha Navidar.

Ariana Brocious: And this is Climate One.

[music change]

Ariana Brocious: Today, we're looking at two very different environmental success stories where communities, smart scientists, innovation, and unexpected allies came together to make a real positive impact.

Kousha Navidar: Along the California-Oregon border, Indigenous leaders led a successful effort to bring down four dams on the Klamath River, restoring hundreds of miles of habitat, rejuvenating the ecosystem for both the salmon and the people.

Ariana Brocious: And in Los Angeles, a combination of science, activism, and policy turned some of the dirtiest air in the country into something dramatically cleaner.

Kousha Navidar: Both efforts took decades. Both faced powerful opposition.

Ariana Brocious: And at a time when we're seeing the federal government significantly pull back from climate and environmental policy, it's good to remember that when enough people get involved, and coalitions are built, real change can actually happen.

Kousha Navidar: I know sometimes that can feel hard to believe, which is why stories like these

are so important. These aren't just stories about environmental wins, they're stories about persistence. About strategy. And about time, because man, it took some time. But, after decades, change did happen.

[music change]

Ariana Brocious: Amy Bowers Cordalis' is a Yurok Tribe member whose ceremony family is from Rek-woi [reck-woui] at the mouth of the Klamath River, which runs through Southern Oregon and Northern California. In spite of losing much of their land during colonization, the Yurok people were never forcibly relocated and have remained deeply connected to the river and its salmon.

In the first half of the 20th century, hydroelectric dams were constructed along the Klamath River. While they provide a zero-carbon form of energy, hydroelectric dams come with real environmental costs - altering the river's flow, degrading water quality, and devastating fish habitats.

For more than a century, Cordalis' family has been part of a multi-generational effort to heal the Klamath, ultimately leading to the largest dam removal and river restoration project in US history. She's the author of the book, The Water Remembers: My Indigenous Family's fight to save a river and a way of life.

Amy Bowers Cordalis: So the Yurok reservation straddles the lower 45 miles of the Klamath River, and my home village of Rek-woi is right at the mouth of the river on the north side, and it overlooks the Pacific Ocean and it's one of the most. Powerful places that I've ever been There's been moments in my life when I've been salmon fishing, and it's particularly pronounced sort of late in the night when the stars are out and. The moon's out, and it's almost like. You could be at any moment in time. Um, because there's not a lot of streetlights, there's not a lot of traffic.

There's, you know, there's no big buildings. It's, there's no real development. It's just a few scattered houses that look the same as, you know, our old traditional redwood houses. And there's barely a few lights, which, which look just like, you know, the fires that we would've used back in the day. And so. Being there still. It feels timeless, which is really a remarkable experience because then I can look up the hill, I can look around and kind of imagine what my ancestors saw.

Ariana Brocious: Yeah. That's amazing. I'm really struck by your description for a number of reasons. I mean, it sounds incredibly beautiful. So throughout the entire book, I mean the salmon are the heart of the story. Um, it seems very hard to overstate the significance of the salmon to the Yurok people. The Klamath River was once home to the third largest salmon population in the lower continental United States. So, what does the salmon mean to you personally?

Amy Bowers Cordalis: The salmon are our relatives, and I think my dad described it to me well and helped me understand kind of my own feelings about the salmon, which is that. We have as Yurok people fished the same runs of salmon since the beginning of time. And because of that, you know, our, our ancestors, both the salmon and the people, um, coexisted and they survived off of each other. And, you know, we had the privilege of being the beneficiaries of those historical runs. We relied on them, but also we had the responsibility to take care of those runs. And so. Everything around the salmon was deeply managed, and it still is to this day. And what that meant was that we could, both through the generation, so the salmon and the people through the generations grow and develop and live in this healthy, symbiotic way. But of course, we're in a time where the salmon runs are severely compromised, and although we've made some huge victories, which we'll talk about later, you know, the salmon runs are still rebuilding, And so, you know, most of what you see the Yurok tribe or other Klamath indigenous tribes do and people is really related to trying to protect those salmon and our way of life. Yeah.

Ariana Brocious: Yeah, let's get into that. The history. Um. Your ancestors reserved the right to fish, hunt, and gather, and to the land and water when the reservation was created in 1855. But for basically a century, the US government tried to take those rights away, even banning Yurok from fishing on the river. And by 1969 your Uncle Ray had had enough. Um, can you tell us his story?

Amy Bowers Cordalis: I love how you said that too. He had had enough, 'cause that was definitely the case. Um, yeah, it's, it's a wild story of resistance and, um, I felt really strongly about writing. Uncle Ray's story and you know, the, the story of my great grandma's generation, that history had never been told. It just isn't out there. it's a tragic history, but it's also a beautiful history of fighting for what you believe in and it, it kind of ties into the beginning of the book, which is the creation story and how we as Yurok people were put here to care and protect the salmon and the river and our place. And we were given inherent sovereignty in order to do that. And inherent sovereignty is really just the, the ability to make rules and be governed by them. Uh, like that inherent sovereignty came from the creator. It didn't come from the US government, it didn't come from the state of California. It was ours. And so when the US came, um, and even, you know, when non-natives came into Yurok country, we reserved those rights, right? and then they were vested in US law as federally reserved rights. And yes, you're right that the US government. Interpreted an 1892 act to basically terminate the status of the Yurok Reservation as Indian country and the state of California followed suit. And so there was, I guess, what would that be? 70 years where? We as Yurok people,we always knew that we had Indian rights, but the state and the, and the feds didn't believe it. And so there was a, a level of like having to go underground and, um, still continue your way of life, but it was considered illegal.

And so Uncle Ray, after all this time just got sick of it because he, he in particular was targeted as, you know, the primary culprit. He was a legend for sure, in part because he was such a good fisherman so people would talk about him and then because they were talking about him, you know, the, the state game wardens would hear about him, and so he became the target. And after one, well, he was arrested 19 times. Just for fishing.

Ariana Brocious: For fishing.

Amy Bowers Cordalis: just for fishing. Think about this 19 times just for fishing on his home waters. And so imagine, you know, if you were just a US citizen and you are fishing in front of your property and the state game warden came and arrested you and beat you up over and over and over again when you're just trying to feed your family. 'cause that's all he was trying to do. Um. Eventually he got sick of it. And so when the time came, he, um, went to court and the judge said, pay me a dollar and I'll drop the charges and give you your fishing gear back. And in true Uncle Ray fashion, he pounded the table and said, no, I have Indian rights and I'm gonna prove it. And prove it. He did. He pushed his case all the way to the Supreme Court and there, you know, the court held that the Yurok reservation was still Indian country and we still had that inherent sovereignty, you know, and the right to, to govern that land, to, to end water. That really, that decision led to the rise of the modern Yurok tribal government as it is, and also created the legal foundation that the Undammed, the Klamath movement relied on in order to get the leverage to get to the settlement, to get to dam removal.

Ariana Brocious: So it precipitated a lot, his, his defiance, his resistance, and, and, you know, um. Defending of his own rights and territory, which I think is really, yeah, really powerful. So you grew up in Ashland, Oregon. You moved home In the summer of 2002 for an internship with Yurok Tribal's Fisheries Department. And during that time you experienced, um, what would become the largest fish kill in modern US history? Reading this passage of the book was really hard. Honestly, I just couldn't believe the volume of what you were seeing.

I just wanna give listeners a little context of why this happened As I understand, um, there were decisions made up river, um, having to do with diverting water for agricultural purposes rather than keeping it in the river to support the salmon. And that just, deoxygenated the water led to massive toxic algae blooms, all these things that contributed to the fish kill. Is that right?

Amy Bowers Cordalis: so there were a lot of factors that caused the fish kill, and dams were harming the river and creating really bad habitat and polluting water, and so they were a primary cause. Also there was a decision made by the then Vice President Cheney to divert an excessive amount of water upriver, um, to support agriculture against, you know, it was made against the advice of the leading, um, federal fish scientists who warned them, you divert this amount of water in this extremely polluted, compromised ecosystem and river, you're likely to have a fish kill, especially at that time. Um, because the diversion happened right when a very large salmon run was going through the river, and also it was a drought year and it was super hot. And so it was sort of like the perfect storm. You think about bad habitat, poor water quality, warm water, no water equals fish kill. Um, because a parasite spread through the entire fish run and killed them. And, um, so that's what happened.

Ariana Brocious: Um, if you don't mind, can you take us back to the moment when you were, motoring up the river, encountering more and more dead fish, what it was like to witness that.

Amy Bowers Cordalis: It was like seeing the end of the world just happening in front of you. It was apocalyptic. It was an existential threat in crisis, just right in front of me. And in that moment, you know, we, there's nothing in Yurok history like that. And we've been on that river since time immemorial. And so if anything of that scale had ever happened there, we would have a myth or a story about it. And for me, what that meant was nothing like that had ever happened before. And so it did feel like you were witnessing the end of the world and. We didn't know at that moment what caused it. you know, and in that moment there wasn't really anything you could do to stop it. Right? and so. We just had to observe. And it was awful. You know, it was like, imagine if your entire family was dying in front of your eyes and you couldn't do anything about it. That's how it felt, you know? So it's hard to read because it was hard. It was awful. Yet in the book I write about being in the boat and really feeling my late great-grandmother's spirit move through me.

Ariana Brocious: This moment, you had this experience witnessing this, as you said, really sparked a sort of career change, life change, um, passion for becoming a lawyer, rather than sinking into despair, which could have been another outcome of this event.

Amy Bowers Cordalis: It was so profound that it launched my life's purpose.

Music: In

Kousha Navidar: After the break, what it took to bring down the dams.

Amy Bowers Cordalis: So really it came down to, either you support this agreement or if you pull out, we're going to keep protesting and suing**.**

Kousha Navidar: That's coming up on Climate One.

Ariana Brocious: Help others find our show by leaving us a review or rating. Thanks for your support!

Music: Out

Ariana Brocious: This is Climate One. I'm Ariana Brocious. Let's get back to my conversation with Amy Bowers Cordalis, a leader of the largest dam removal and river restoration effort in US history and author of The Water Remembers: My Indigenous Family's fight to save a river and a way of life.

Ariana Brocious: in 2016, the lowest salmon run in history returned to the river. The fish population was only something like one to 3% of the historical size, which is staggering. Um, and in this was the first time in Yurok history that you did not fish for salmon. The same year a suicide emergency was declared on the reservation. And so. I see there being parallels, but I would, I don't wanna make assumptions. I mean, can you describe what that moment felt like and how it was impacting your community?

Amy Bowers Cordalis: It felt like from 2002 until the dams came down at the end of 2024, that we were witnessing the end of our time on Earth. There's a Yurok myth that says if the Klamath salmon dies, so too will the Yurok people, because our purpose and our fishing way of life won't exist anymore. And. So in that timeframe following the fish kill until the dams were removed, the indigenous peoples of the Klamath felt like our lives were on the line. That, you know, there's no other way to say it. And, um, I think the suicide emergency just reinforces the point that, you know, our health is deeply tied to the health of the river and salmon and that, um, we, it is, it's difficult for our youth, you know, who were the primary, um, age group that took their lives in that time. They just couldn't see a future without a healthy river and salmon.

Ariana Brocious: Yeah. Yeah. So. You, um, and the Yurok tribal nation came to the decision that the dams had to come down. Um, and so you spent years working on this, trying to get the dams to come down. Um. Let's go back to 2020. A very difficult time for many people. COVID pandemic is rampant. Um, you've just had a baby six weeks before, congratulations. And so you're attending a meeting on the river with Warren Buffet's team about the dams. Berkshire Hathaway, which is Warren Buffett's company, owns the utility that operated the Klamath River hydroelectric dams. Um, why was it so important for you to attend that meeting? Even given all those, you know, frankly, a pretty scary time to be in the world.

Amy Bowers Cordalis: Yeah. Uh. Well, the vice chair called me and said, you gotta come. And when the vice chair calls you and says, you gotta come, you come. And, um, I appreciated that. I felt, um, honored by his request that I be there. And, you know, the Yurok chair and vice chair of the time is, um, chairman James and Vice Chair Frankie Myers. They were brilliant in calling Warren Buffet's top executive to the river to let the river speak for itself. And so, you know, so everyone's totally freaked out, not traveling, not doing anything. But what they said was, we'll stay outside, we'll get on the river, we'll have the meeting up at Blue Creek with it, which is a tributary to the Klamath. It's gorgeous. It's one of our sacred sites. And so. They came, you know, to their credit, they came and, um, we got 'em up the river and we had, um, like a, a tent and some chairs and food and drinks set up at the, the mouth of Blue Creek where there's this nice flat that time of year. And we told him how we felt. You know, we told him how we felt and we essentially said, we're never gonna stop. Fighting for dam removal, like we will never stop. So really it came down to either you support this agreement, which by the way is a good business deal for you, or if you pull out, we're gonna just keep protesting and suing. And so, you know, we're, we're gonna get out of this one way or the other, and the dams are going to come down. It's just whether you. Take this deal or go through a lot of pain and trouble and take the next deal. You know, there was like, no, was not an option. And so, um, you know, I, I was, and, and it was, it was a funny, it was a humbling, funny kind of moment too, because I got there and. You know, I'm like six weeks postpartum and, uh, you know, my body's changing and I, I could barely find pants to wear to, you know? Um, and, and anyways, so I get up there and I, I, you know. I told him how I felt about it and I had a term sheet prepared and my like, primary job at that meeting was to deliver the terms.

And then I just forgot. I just forgot. And so the vice chair very like, you know, just poise like, kind of gives me a wink and I'm like, oh yes. So, and then we, we got into the terms and I delivered the terms and we talked about it. And then, um, you know, they sort of nodded their heads and. They took a private plane there and apparently on the way back they called their lawyers and started the conversation about whether any of the terms were amenable. And then that following Monday, I got a call from one of the executives that they were ready to talk and then that launched negotiations for a new agreement. And that honestly was what led us to Klamath dam removal. You know, in the book, I, I titled that chapter, uh, Blue Creek versus the Dams. I really believe that that's what it was. You know, blue Creek spoke for itself. Blue Creek and the magic of that place, um, really I think, got into those executive hearts and they realized, you know, this was something worth saving and something worth fighting for. And we presented a rational, good, you know, business approach. And so it ended up being a good deal for everybody. So Blue Creek won.

Ariana Brocious: So, um, this just is such an important piece of, this to me is such an important resolution. You personally got to ignite the detonator to blow up one of the dams, and you describe it as the biggest emotional release of your life. Listeners can't see, but you're shaking your fist in the air in like a victory thing. I mean, what did that feel like?

Amy Bowers Cordalis: Oh, it was the most amazing experience and, and also I didn't know it was gonna happen, and also it was my birthday,

Ariana Brocious: Oh.

Amy Bowers Cordalis: I, yeah, so I, I got invited to watch, you know, one of the, the Detonations, so one of the, the, there were a series of explosions to remove the dams and. It was like nothing to do, to be able to go to them.

And so I just was thrilled that for my birthday I got to watch one of these. So anyways, here we are. And they say, Amy, do you wanna press the button? And it was like, heck yeah, I wanna press the button. And so they give me the instructions and I'll just never, it was like time stood still, you know? It was like time stood still and I'm hearing like five. 4, 3, 2, 1. And I get to yell, fire in the hole and then stomp on that detonator with my foot with, and it did feel like Uncle Ray was there, great grandma was there.

All the ancestors just like put their life force into me and it came out, you know. Stomping on that detonator. And, um, then boom, you know, ka bluey and, and there's dust and there's, you know, you can see metal chunks and big chunks of rock, like, you know, just launched into the air and then, you know, the dust settled.

We could see the impact of the dam. And, you know, it was substantial. The whole chunk of the dam's gone.

I used to literally, like, you know, when we were growing up and we'd be sitting around fish camp kind of daydreaming about things we would talk about, just going up and blowing up those dam and then here I was all these years later and I got to do it and it was legal,

Ariana Brocious: Yeah, it's incredible.

Amy Bowers Cordalis: Yeah.

Ariana Brocious: It's like the positive version of, uh, the Monkey Wrench gang story. Um,

Amy Bowers Cordalis: it totally is. That's exactly what it was,

Ariana Brocious: Um, in your book, you write about realizing that you were the first generation to not have a violent relationship with the state of California.

Amy Bowers Cordalis: Yeah,

Ariana Brocious: Which is remarkable. Um, how did that realization hit you and, and what do you think it means in the context of your own family's story?

Amy Bowers Cordalis: it means that we can repair historical injustices. The truth is, and we all know it, that the founding of the United States was ugly and a genocide, just was. And you know, the country is built on the backs of indigenous peoples and resources and lands. Um, and also of course our African American, you know, families that came over as well., and that's ugly and awful, but we can restore those historical harms and injustices and build a future that is based on respect. Um. I really believe that, and it was such a wonderful, like profound experience writing the book because I did a lot of research, right, like research into state records, into laws.

I did a lot of interviews of family members and others who were involved in, you know, uncle Ray's case for example, or the fish wars and. So a lot of what came out in the book was being revealed to me through these interviews and then the process of organizing the stories.

Um, you know, realizing that my family really had fought every Secretary of Interior, every, um, you know, director of Fish and game or department of, you know, natural resources in California up until me, um, you know, I was proud of that because. They fought for our rights and for our resources, and so they were exercising their duties and in many ways I, I tried to continue that legacy by being a lawyer and I was extremely lucky that the world had evolved to a place where at least, um, you know, the people in those leadership positions, the, you know, director of Cal Fish and Game, the Secretary of Interior, were willing to speak with us and treat us with respect and honor our rights. You know, and that is a testament to the success of the previous generations, you know, of my family, but, and many other indigenous families too, you know? 'cause, and I think that's a really important point, is that, you know, this, the, the book was, was based in my family's story because that's what I knew about. But there are so many other indigenous families on the Klamath that have a similar story. Um, because that's what we do. We fight as indigenous peoples for our, you know, our rights and our resources. And that just looks different in different, um, generations. But I will say it was very historic that, you know, secretary Deb Haaland, the first indigenous woman or indigenous person to be the Secretary of Interior, was in office during dam removal. And it was, you know, profound to know that. Here we were in this moment of great healing and she was in a leadership role and helped us, you know, get across the finish line.

Ariana Brocious: yeah. So, on September 30th, 2024, all four dams were removed. More than 400 miles of water flowed freely after all this time. And the changes to fish habitat started almost immediately.

Amy Bowers Cordalis: Yeah,

Ariana Brocious: In what ways did you begin to see the river heal itself, essentially?

Amy Bowers Cordalis: so many ways. And the first was watching Iron Gate be low, and that's the lowest down river dam. Be lowered. So that the water could reconnect for the first time in a hundred years, and that moment was remarkable because it felt like the river came back to herself. It felt like it had this like gigantic sigh of relief and that it had been longing to be whole, and that when the water connected, it was finally whole again. And I know that I put sort of human thought and consciousness on the river. that's my level of consciousness. But it felt like the river was relieved,

like deeply relieved, you know, going to Iron Gate Dam and, and seeing the reservoirs behind the four different dams, it always looked to me like the river just was hurting. And I think about it, like, if you're a human and you had like a, your elbow bone sticking out of your arm, um. Or you had like a knife out of your head or something, and apologies for the gruesome reference, but it, it just felt like there was something dramatically wrong with the river and it was hurting. And so removing those dams, the river just seemed relieved and like it could get back to its historical vitality and, um, resilience Um, you know, there was sediment that was flushed out from behind the dams, but once that cleared, which it cleared quickly 'cause we had a really wet winter, the water quality almost instantly improved and then water temperatures dropped. And um, there used to be this really sort of, um, kind of putrid organic smell on most of the river. It smells sweet now.

Ariana Brocious: Hmm.

Amy Bowers Cordalis: It just smells sweet. Um, and it feels cleaner, like when you get in it and you swim in it. And I remember this moment of one of the first times I swam in it once the sediment and the dams are gone. And it was like, you know, and this is the place I've swam my whole life. It was like, oh, it's so different. And the water almost seemed to tell me, yeah, I'm different. Like I am, I'm back to what I'm supposed to be. Let's talk about the salmon. So. Three days after Iron Gate Dam was removed, the leader salmon passed Iron Gate and went up into historical spawning grounds. It hadn't, you know, salmon hadn't gone in a hundred years. This year, 30% more salmon passed the project site and went back even further, into habitat in Oregon. Um, you know, and we're talking, they're going like 300 miles from my village, you know, the mouth of the river, up the river system into these ancient historical spawning grounds. And they're spawning. And what's cool is that even this year, we're seeing little baby salmon. From, you know, that first run that went past the, the dams and spawned their, their kiddos. The baby salmon are going out and starting their journey to the ocean now.

Ariana Brocious: Hmm,

Amy Bowers Cordalis: And funny fact about baby salmon, they only swim backwards on their way out. Isn't that hilarious?

Ariana Brocious: I did not know that.

Amy Bowers Cordalis: I, I, yeah, it's hilarious. So, so everything's just healing so quickly and I think what it shows to us, and this is important, is that nature can heal. So many people feel like there's no hope and we have to move to Mars. We have to move to the moon. And sure those folks can go, but we can also repair the earth and make it healthy again. And when we work with nature, it works with us and that's what we've learned on the Klamath.

Ariana Brocious: Amy Bowers Cordalis is executive director of Ridges to Riffles Indigenous Conservation Group, and author of the Water Remembers My Indigenous Families fight to save a river and a way of life. Amy, thank you so much for sharing your story here on Climate One.

Amy Bowers Cordalis: Thank you for having me. Walk loud.

Ariana Brocious: Currently, there are 2 other dams on the Klamath that allow fish passage. The state of Oregon, in partnership with Klamath tribes, is exploring ways to improve that access - including the possibility of removing the dams entirely.

Kousha Navidar: We've been talking about water. Let's move to air. Ann Carlson is an expert in environmental law. Under President Biden, she served in the Department of Transportation as Chief

Counsel at the National Highway Traffic Safety Administration She is the author of Smog and Sunshine, the surprising story of how Los Angeles cleaned up its air. Thanks so much for joining us on climate.

Ann Carlson: Thanks. Great to be here.

Kousha Navidar: So when I visualize what LA looks like, in my mind, I see a few things. I see the sun blazing, I see traffic crawling. I think a lot of people do. And the air, like honestly for me, it's like hazy. It is very thick. And I think that's how a lot of people think about the air in LA. And I wonder, is your blood pressure spiking just after hearing me say that?

Ann Carlson: Yes, just a bit because LA's Air is. So much cleaner than it used to be. And the city of Los Angeles actually rarely violates federal pollution standards. I'm looking at my window right now to blue skies and billowy white clouds after a couple of days of rain, and it's gorgeous. And so your vision is just wrong.

Kousha Navidar: Yeah. Oh, fair enough. That's, that's why we're talking to you. I really appreciate it. Um, let me ask you this then. How did confronting this public perception of LA's air quality, like lead you to writing this book?

Ann Carlson: Well, I had a number of encounters with people who. Made comments about Los Angeles Air that were so far out of reality that I was shocked. I was hiking with a group of women in Glacier National Park during a summer where Montana was experiencing the worst wildfires in its history. And so you couldn't see the blue skies of Montana. They were occluded with smoke. You could get above the smoke at about 7,000 feet, but even then, you just never saw the kind of gorgeous blue skies that we were expecting. And on the last day of our hike, we had a guide and. It was so smoky and so terrible that we were being rained on with ash, and we were debating whether we should hike or not, because you could just see how terrible the quality of the air was. And she leaned over to me, the guideide did, and she said, this must remind you of home. And I was just flabbergasted. I thought, is this what she thinks we live in? This is nothing. It's not raining ash where I live. It's not even close to that. And your skies are completely occluded and ours are not. That's not to say that we don't have pollution problems. I don't wanna downplay them. In fact, we should talk about them. But relative to what we used to experience, it's not the same city. It's not the same region. We were so polluted with smog that we were being poisoned, and that just isn't true anymore.

Kousha Navidar: Well, and I wanna get into that transition, and I actually wanna start back in the fifties, because that's when your family moved to the LA area, like you grew up there. What do you remember about the air when you were a kid?

Ann Carlson: I did. Although I have to point out that I wasn't born in the fifties, so.

Kousha Navidar: Sure. Fair enough. Yeah. Yeah, yeah, yeah. Important distinction. Yeah.

Ann Carlson: So, so my parents moved to Southern California, like many Midwesterners in the 1950s, my dad moved for, to work for the aerospace engineering, uh, industry. And my mother was a school teacher and they drove in the summer of 1953 and in October of that year, my mother was a kindergarten teacher in Compton and it was a very windy day. She remembers this very vividly because her colleagues didn't wanna take the kids out on the playground because it was so windy and she was from Chicago, so she didn't think anything of the wind. So she walked out on the playground and for the first time realized that there were mountains that ring Southern California. She didn't know there were mountains. She hadn't seen them in months. So just to give you a

Kousha Navidar: air was so polluted that she like couldn't see through the horizon, like, wow.

Ann Carlson: couldn't see it. So growing up, I was born in 1960 and it was just a regular feature of childhood and teen hood to have burning eyes, to have lungs that ached every time you breathed. You just, it just came to be part of your normal existence

Kousha Navidar: . Okay. I want to hear about the transition from what you're describing to, um. What it is today, we're gonna go to the 1940s. La car ownership was booming.Developers were building low density neighborhoods. There was a real surge in industrial activity in the region. This was when public concern about the air quality re really began to, to take shape. So can you talk a little bit about what that looked like in terms of concern, what were some of the first steps towards making that public?

Ann Carlson: Sure. So one of the most vivid days in Los Angeles in the 1940s was a day when people thought that. Los Angeles was being bombed by the Japanese during World War II because the air quality was so bad and nobody could figure out why it turned out to be a chemical plant that was emitting all sorts of terrible gases, et cetera. But that's how bad it was. Like what is the smoke that surrounding us? And you see pictures at the time, often in the Los Angeles Times, which is really the paper of record in Southern California at the time where, you know, people are rubbing their eyes. You can see the smog closely in the background. Some, occasionally you see somebody wearing a gas mask. I mean, the air quality is just putrid, and that really starts to generate significant public concern. Pressure put on the governor, pressure put on local political officials, the political officials themselves, experiencing the smog. So wanting to do something about it because they were tasting it, breathing it, seeing it all the time.

So that really begins this combination of public pressure and public response, a governmental response to try to do something to clean up our air.

Music: in

Ariana Brocious: We'll continue Kousha's conversation with Ann Carlson after the break.

Coming up, who steps up to solve problems when industry won't.

Ann Carlson: One of the things I think is really important to underscore in the fight to clean up Southern California's air is how important government is.

Ariana Brocious: That's up next, when Climate One continues.

Music: out

Kousha Navidar: This is Climate One. I'm Kousha Navidar.

Let's get back to my conversation with Ann Carlson, author of Smog and Sunshine, the surprising story of how Los Angeles cleaned up its air.

Kousha Navidar: One of the central characters in your book, which is named Smog and Sunshine is a Caltech Chemist, Dr. Hagen-Smit is later known as Dr. Hogg and Smog. He were studying pineapples, right? And you discovered that cars and gasoline were primarily responsible for LA smog problem. How do you get from pineapples to smog?

Ann Carlson: So he gets there in a couple of different ways. He's appointed to a subcommittee of the US Chamber of Commerce or the Los Angeles Chamber of Commerce, uh, to study air pollution.

And he starts getting letters that the committee does from farmers whose crops are dying and. They don't know why or what's causing it. And he says, if you wanna know what's in smog, they seem to know that it's smog. You have to study its composition. And it turns out that the composition of smog is actually studying it, um, is not so dissimilar from studying the flavor of the pineapple. So what you're looking at, yeah, it's totally wild. Who would've thought that a pineapple scientist becomes a hero in the book

Kousha Navidar: It makes me feel bad 'cause I like pineapples a lot.

Ann Carlson: I do too. So, so he's, he, he basically, you know, is looking at very fine, you know. Particles and trying to figure out, you know, what makes up the substance of the flavor of the pineapple, what makes up the substance of the smog that is plaguing Southern California. And by this time, actually, a lot of work has been done to address what we call stationary sources. Those are things like, you know, utilities, oil refineries, chemical plants and so forth. And we haven't done anything about cars. And he, discovers that the compounds in Los Angeles, air come from petroleum. But what he also discovers is that they aren't emitted from vehicles in high enough concentrations to actually explain their concentration in the atmosphere. So something else must be going on. And he hypothesizes that when hydrocarbons interact with sunshine, they create ozone pollution. They create ozone pollution. In order to test his, his hypothesis, he builds a plexiglass chamber outside his office so the sunlight can get in, and he emits basically the same chemicals that come out of the tailpipes of vehicles. And he recreates Los Angeles smog called, of course, Hogg and Smog.

Kousha Navidar: So he kind of finds the missing link there because it isn't just about what's coming out of the tailpipe, it's about how that interacts with the sun. Like that's the reason why folks weren't focusing on cars. Right.

Ann Carlson: That was one reason. Another reason is that car manufacturers refuse to take any responsibility. They kept saying our products are not causing smog. But there's actually more to the story too. So the car companies at first just ignore Haagen Smith. They don't do what the oil companies do. They don't try to discredit them. They just act as if his science doesn't exist. And one of the reasons we know this is because Kenneth Hahn, who is a supervisor on the LA County Board of Supervisors, had been on the city council serves for 40 years in Los Angeles. He's a legendary figure. Every year, starting the early 1950s, he writes to the heads of the big three auto companies and he tells them, we need to figure out how your product is contributing to Los Angeles smog, and you need to do something about it. And in the first few years, the car companies literally just deny that there's a problem once they finally have to acknowledge.

They then delay and they keep saying over and over again, we don't have the technology. This is a really hard problem. There's nothing we can do until the technology is available. They do this for several years, but then this is the malicious part. They band together, they form what is what they call a a vehicle emission subcommittee, and they agree that no one will install technology unless they all do. No one will make a profit from the technology and they will buy patents from inventors who are trying to solve the problem. So lo and behold, nothing happens.

Kousha Navidar: nothing happens. Right, right.

Ann Carlson: You ask about parallels today, right? Yeah. There are a lot of parallels.

Kousha Navidar: I also wanna, before we get into the present, I wanna touch on folks working in advocacy in all kinds of ways every decades from the fifties through the eighties. One story I want to hear about is the Mothers of East LA, which is a group that started as six Latino women living in the Boyle Heights neighborhood. That was one example of community advocates demanding change.

Can you just quickly talk about them a little bit so we hear that side as well?

Ann Carlson: Yes. So one of the things that was so remarkable about the Mothers of East LA is that they shifted our attention from overall air pollution, background air pollution. We got those levels down and they were declining by the 1980s. But what they really focused on is that some groups were bearing a much bigger burden of pollution than others. And not surprisingly, those groups. Tended to be low income communities and communities of color and Mothers of East LA went after a, proposed incinerator that was gonna be cited in East Los Angeles, which had already been the dumping ground for all sorts of pollution problems that had also been bifurcated by the 101 Freeway. And she and five other women got together and. In order to put public pressure to bring public attention to the issue, they wore white and they pushed baby strollers across a bridge from East Los Angeles into downtown and generated just an enormous amount of press. They got the attention of environmental lawyers who then represented them, and they were successful in stopping the building of the incinerator, but maybe even more importantly, they were successful in. Really, uh, providing an example of the way in which environmental harms can be really unjust, can be really unjust based on income, based on ethnicity, and so they're really in California. I think the foundation for the environmental justice movement.

Kousha Navidar: Oh wow. Let's bring it to the present now. So the Clean Air Act, let's start there. Landmark US law authorizes the federal government to regulate air pollution, set nationwide air quality standards to protect public health. Interestingly, signed into law by Republican President Richard Nixon, in 1970. It's been on the chopping block a few times by politicians who argue for a more deregulated approach to government, and we're in one of those moments right now. I mean, on the EPAs website, there's an announcement that says, under Administrator Zeldin, we've had the single largest deregulatory action in US history. So you think about all of this effort that happened since the forties. How do you sit with this moment that we're currently in with this administration?

Ann Carlson: Let me, also point out that the 1980s was a time of federal deregulation. So Ronald Reagan is elected and one of his major platform issues. Is deregulation and he focuses on environmental regulation and in particular the Clean Air Act and tries to roll it back. It's unsuccessful in part because of public pressure. So fast forward to today, this is actually a continuation of a battle that's been going on for really 20, 25 years almost now about our ability to, and willingness to regulate greenhouse gases. So greenhouse gases, which cause climate change are considered a pollutant under the Clean Air Act, and that means EPA needs to regulate them. It also means that California, which has its own special authority under the Clean Air Act to issue its own emission standards for vehicles that comes into play in the mid 1960s has been using that authority to regulate greenhouse gases. And so there's a, an attack on California power, which is really, uh, problematic for the state, not only in trying to address climate goals, but also continuing to address the pollution problems that we have in Southern California and in the Central Valley of California, but also trying to eviscerate any regulation of the emissions that cause climate change. So it's just a wholesale attack. The eighties were a very big attack. I've never seen anything like what's happening today.

Kousha Navidar: So you had just mentioned about the state of California's own authority to regulate, and now the state of California, other states, they're suing the federal government. It's a lengthy process. Can you give me kind of the effect that this has in the meantime on communities? Like what's it look like on the ground?

Ann Carlson: A lot of tough regulations remain in effect. and those regulations and regulations of the past have done a ton of good. So every vehicle on the road today is at least every car trucks sometimes have different technology, but is outfitted with a catalytic converter. Those catalytic converters are extraordinarily successful, and so cars today on the road are 99.5% cleaner than they

were in 1970. We're not going back on that. So it's important to recognize that we've actually made a lot of strides with California at the forefront in cutting diesel pollution. That's in part by changing fuel, right? California's actually required a lot of diesel trucks to be retrofitted, to have traps on them. So they trap, um, some of the particulate matter that might otherwise come out of their smoke stacks. So a lot of that remains in effect. So I don't wanna suggest that we're going back to what the air quality looked like in the 1950s or sixties or seventies,

Kousha Navidar: yeah, that's important.

Ann Carlson: but what the deregulatory efforts are doing are twofold. One, let's talk about air pollution. So, and I'm gonna focus on Southern California because that's the focus of my book, but Los Angeles is still out of compliance with the, what's a, what's called the Federal National Ambient Air Quality Standard for ozone pollution. And that ozone pollution is principally caused by the transportation sector. We cannot meet even a standard that was set 20 years ago, let alone more contemporary standards, and the only way for us to meet them is to zero out all emissions on vehicles. That pretty much means electrifying vehicles. California can't do that now that it no longer has the power to do that. It can try to incentivize, it can provide tax incentives and stuff, but it can't mandate it, which it was doing before. and you can play that out over a bunch of different areas of the country. Many, uh, areas are not in compliance with the most current ozone standard and vehicles are often one of the big contributors. That means whole bunch of areas continue to have unhealthful air again, nothing like it, what it used to be, but we still have a ways to go.

Kousha Navidar: you're saying the, the, the incentive to get to that next level, that, which in this case is kind of a stick. 'cause you're talking about mandates that no longer is available and so the structure, just the incentive's not there to take it to the next

Ann Carlson: I would say it's not even an incentive. It's the tool. It's a legal tool that California has. So that's one problem. A second problem is that some of the worst pollution problems that remain are localized pollution problems. So people who live near freeways that are heavily trafficked, especially with diesel trucks, the ports, rail yards, warehouses out in the Inland Empire, as we call it, San Bernardino and Riverside County, those warehouses don't pollute, but they attract diesel trucks to them that are bringing goods from the ports to the warehouses so that we can satisfy consumer demand for, uh, goods from Amazon and Walmart and, you know, all this consumer culture. A lot of those products coming in from Asia through the Los Angeles and long beach ports. So that's a second problem. We, the way to address those is with cleaner vehicles, and California's lost its authority to regulate vehicles. The third problem is climate change. There was a bill passed during the Biden administration to provide huge amounts of incentives and grants and loans to spur the development of green technology. Most of those incentives got repealed by Congress. The vehicle standards that my agency issued that what are called the CAFE standards, those are fuel economy standards. Those have been dramatically weakened. you name it, and if there's a program to address it, it's being attacked. So it's just this wholesale attack. Anything that would reduce our greenhouse gas emissions. A wholesale attack on renewable energy at a time when we need more energy. AI is, you know, consuming electricity and pushing up demand in ways that we haven't seen in, um, in decades.

Kousha Navidar: We're just stripping away all of the tools.

Ann Carlson: Yes, and we're doing it at a time when the rest of the world is going in the opposite direction.

Kousha Navidar: So I hear all of these different factors coming together and you know. A lot continues to change even after this book is published. What made right now feel like the right

moment to publish this book?

Ann Carlson: This is a classic economist called a public goods problem, where if one person tries to, you know, cut their pollution, someone else is just gonna keep polluting. And so there's no real incentive to do so. And the story of cleaning up Los Angeles Air is about the power of government. It is local governments, it's the state government, it's the federal government engaging in pretty extraordinary measures to attack a problem that wasn't gonna get cleaned up on its own. And we're in a moment where government is being vilified constantly, particularly the men and women in the civil service at the federal level who are demonized as the deep state and as undemocratic and all sorts of things, and they're heroes. You know, in a lot of cases, I have to say, working in the federal government as a political appointee for President Biden, one of the most notable things for me was the extraordinary quality and talent in the federal civil service. And so to see them attacked and to see government attacked as somehow incapable of solving problems just struck me as a, a narrative that was not only wrong, but they needed to be corrected and they needed to be corrected with an example that people could understand and see and experience themselves.

Kousha Navidar: So it's, it is a lot about changing the narrative. Motivating folks, let's, let's apply that to people who aren't in the government. I mean, what would you say to people who are concerned about what's happening with environmental rollbacks, with climate rollbacks, uh, and they're just not sure what to do about it?

Ann Carlson: individuals matter and individuals matter in different ways. Lawyers can matter. Uh, journalists can matter tremendously. I mean, the LA Times is incredibly important in this story. It doesn't have the power that it used to, but reporting on these questions is really important. Public protest matters like getting out to your community meeting and you know, holding up a sign, going to protests, the No Kings protest. It's not all about the environment, but. I think it has real, um, purchase to see people in the streets. Earth Day in 1970 had millions of people clamoring for a cleaner environment and, you know, we could, we could return to that kind of pressure for climate change.

The Sunrise movement, actually, that's the movement of young people that brought us the Green New Deal, which of course became a pejorative among certain politicians, but they really changed the narrative so that the. Biden administration started to look at climate change, not just as an environmental problem, but as an economy wide issue.

So President Biden put climate folks in virtually every agency. And then the Inflation Reduction Act, which again has been largely eviscerated, was about looking at all of the ways in which climate change affects our economy and trying to spur technological development.

Kousha Navidar: Yeah. And I wanna circle back kind of to where we started this conversation. 'cause cleaning up LA's Air was a remarkable achievement. It required a remarkable community behind it. And I guess this may be philosophical, but, and do you think that we as a society are still capable of doing such great things?

Ann Carlson: I do, We actually have a lot of tools already. One of the things that, to note is that we've driven down the cost of renewable energy dramatically. In some states, 20 to 25% of new vehicles are electric. That's because of policies. It's because of tax incentives, it's because of regulation. So we've already done a lot. but another lesson I think from cleaning up Los Angeles Air is nothing is a one-shot deal in the pollution context. We started regulating in the 1940s. We're still regulating today, 80 years later. So persistence and kind of having the long game in mind is also, I think, really important. We will have setbacks. We gotta keep pushing.

Kousha Navidar: Ann Carlson is Professor of Environmental Law at UCLA and author of Small. And sunshine, the surprising story of how Los Angeles cleaned up its air. And thanks for hanging out with us and for your book.

Ann Carlson: Sure. It was great to be here. Fun to talk to you,

Music: In

Kousha Navidar: And that's our show. Thanks for listening. Talking about climate can be hard, and exciting and interesting -- AND it's critical to address the transitions we need to make in all parts of society. Please help us get people talking more about climate by giving us a rating or review. You can do it right now on your device. Or consider joining us on Patreon and supporting the show that way.

Ariana Brocious: Climate One is a production of the Commonwealth Club. Our team includes Greg Dalton, Brad Marshland, Jenny Park, Austin Colón, Megan Biscieglia, Kousha Navidar and Rachael Lacey. Our theme music is by George Young. I'm Ariana Brocious.

Music: Out