Alexandra (Alex) Morton: "Walk Beside Me, Not Behind Me"

Season 2, Episode 1

Small Planet Heroes Podcast

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***This transcript has been lightly abridged, with punctuation, for optimum coherence and flow. Fidelity to the original conversation has been maintained whenever possible.**

Kai: Hi, I'm Kai Chan. I'm a professor and Canada Research Chair at the Institute for Resources, Environment and Sustainability, and also the co-founder of CoSphere, a Community of Small Planet Heroes, and the organization that produces this podcast. And I'm joined in the studio by Clare Price.

Clare: My name is Clare Price, and I am a second-year Master's student with Kai studying urban sound and transformation.

Kai: Today, we have the pleasure to talk to Dr. Alex Morton, one of the most important people in the fight to get farmed salmon out of the water and to protect wild salmon in the streams and in the Salish Sea where they belong. She's a passionate advocate for wildlife along the whole coast. She came up here to study orcas and stayed to help save them. Thinking across countless systems and problems, environmental fights about resources, I can't think of a single person who has been more central to a battle, especially one that's been successful over more decades than Dr. Morton.

Clare: I can't either. Maybe one small way of capturing her impact is how she's often described as a blend of Jane Goodall meets Erin Brokovich, though her impactful activism is renowned entirely in its own right for the transformational impact she has had in holding government and industry accountable. Notably, she won a Women of Discovery Sea Award in 2010, which adds her to the ranks of women like Sylvia Earle and Jane Goodall in celebrating absolutely groundbreaking contributions to science.

Kai: She's an institution builder too. She founded the Salmon Coast Field Station and the Raincoast Research Society. She's written scientific articles on orcas, dolphins, and fish farms, and she's a best- selling author with six books on these topics. She brings science in in an unusual way into the fight for transformative change for sustainability. She's been independent for all this time, staying out of universities, as well as at arm's length from industry and also from NGOs. And there are powerful reasons for that that she explains in her book, *Not on My Watch*. She did her Master's degree at American University and has an honorary Ph.D. from Simon Fraser University. Alex did not need to go through a doctoral program to use science in powerful defense of nature.

Clare: For all of these reasons and more, we are so excited to have a conversation today with Alex about her journey as an environmental advocate, fish scientist, and system change trailblazer, among many other things. So beyond being a huge fan of Alex's work, beginning in my own undergraduate research on wild salmon and sea lice, I also have to say that I connect to Alex as someone who comes from what she has called a "whale-less environment." I also followed a call to the coast.

Kai: I've been wanting to have this conversation for more than a decade, since Sarah Klain, who did her Master's degree with me, had a transformative conversation with Dr. Alex Morton for her thesis. We were both wowed by her eloquence, her brilliance, and her conviction.

It's going to be a bit of a different interview for folks who have heard Alex before, and if you haven't, I

hope that you'll look up a whole bunch of pieces, because she's been amazing on all different kinds of podcasts. This one's going to be a bit different. We're not just different. We're not just going to talk about salmon. We're not just going to talk about orcas and whale communication. We're going to talk about system change, but we're going to do that through these lenses.

[*Medley of Small Planet Heroes theme song*]

If there's a pit in your stomach from the way that we live,
You want it to change, something's going to give,
We've got stories that'll give us a glimpse
Of better ways to reconnect everything.
We're Small Planet Heroes,
Small Planet Heroes.

Kai: All right. Alex, hi, how are you?

Alex: Hi, I'm really good. I think I can honestly say I'm at the best stage of my life ever. [**Kai:** Wonderful]

So thank you so much for having me on here. And I've been very interested in you, Kai. The early talks that we had and exposure I had to you really got me thinking, because it is about whole systems. That's–you have to look at that or you aren't going to succeed in protecting things, and you're going to miss a lot.

Kai: Yeah, we have so much we want to talk to you about. Clare and I are super-excited. I want to start with a point that you raised on the *Cultivating Conservation* podcast. It's similar in your book. You talk about yourself as, in that context, "really ill-suited" as a person for the task that you found yourself doing, which was, you know, conservation and activism, leveraging change to protect an ecosystem. You said then that–and elsewhere–that you didn't see any results of your own actions until the First Nations came into the fight, basically, many years after you started.

Clare and I see things a little differently. You know, the way that we see it, you laid the groundwork for what happened in *so* many different ways. And not only that, in terms of salmon, but also inspired so many of us to see both the systems as they operate (and we'll get more into that), and also what's possible when one person doggedly pursues the truth and a better future. So I–I want to challenge you on that as to–we actually see you, not as somebody who's poorly suited to conservation and activism, but in a sense, maybe somebody who's like *perfectly* suited to that because of your ability to understand how systems operate and to find leverage for change within them, troubleshooting and problem solving in ways that field scientists and lab scientists alike can relate to. And then also your unbelievable capacity for science communication. Have you had training in this area? Because you're so eloquent on air. Always.

Alex: You know, I think what I was saying, when I said I was "ill-suited" was simply that I didn't want to do it. I just wanted to *completely* immerse myself in the vocalizations of killer whales. What is this big brain, lives in a cold ocean, is hungry for oxygen, in an animal that's holding its breath. Why is this– why is this brain there? What is it doing? What is it saying? That's all I wanted to do, and I wanted to ignore

everything else.

But no, I have no training in speaking, and it's just–I recommend it–but I do have the gift of the gab somehow. And I, you know, in the end or it's not the end–but looking back, I feel like the place that I was in, the Broughton Archipelago, grabbed me and became a really ruthless taskmaster and would not let me go. And that was the relationship that we had. Because the reason I was so impatient, first of all, I was watching salmon go extinct, and it was just for no good reason. And it was, it was just so frustrating and infuriating and sad, but also I just wanted to get it over with. I wanted to get back to the whales where I am finally now, sort of–I slip off the wagon every now and then and do fish stuff, but [I'm] really trying to focus on the whales now.

Kai: Yeah, it's so interesting, because your journey is, in some ways, the opposite of mine, where I I didn't want to be an academic, and yet I kept on getting pulled back into it, you know. I wanted to pursue the change, and I didn't see how better to do it. I kept on finding that, for me, an academic path was a pretty good one to be able to push for certain kinds of change. And it's interesting how you were kind of the opposite. You just wanted to do the science and yet you got pulled out of academia and still doing science, but differently. Have there been moments along the way where you have realized that actually you do really want to do this? Or has it always been like, "Damn it, I want to get back to the science"?

Alex: Oh no. It's been, it's been very exciting. First of all, I spent 24 years counting 1000s and 1000s and 1000s of sea lice on juvenile fish.

Kai: That's not the exciting part is it?

Alex: No, well, each fish was so incredibly beautiful, and sea lice are fascinating. All creatures on this planet are fascinating. Also, there was the hunt and the chase, which turns out I quite got into and so I was not going to let things go. And, for example, in Canada, we have the Access to Information Act. And when I learned about that about halfway through, I began reading the correspondence between the bureaucrats about me, about the issues, about problems, and I got the whole inside track of what was going on. The biggest problem I faced was just my sheer ignorance on what industry is about and what government is about, and the relationship between the two of them. Yeah, and that burnt up decades of–. My naiveté was just shocking, actually, and so it was a long–it was a huge learning curve for me.

Clare: Interesting. What–what we're talking about here reminds me of something that Kai taught me very early on, before I even started my Masters, and he asked me to kind of connect with what he calls *critical ingredients*, which are the things that are so, in my mind, deep-seeded in your heart or your soul or your brain, wherever you think these things live, that can drive your work forward endlessly. And one of the conversations we've had in thinking about your work is how it seems so abundantly clear that you have this relationship to your critical ingredients, to your mission, that enables you to work through the difficulties of being naive or even just challenged by impossibly bureaucratic and difficult systems in order to come out the other end. Was there kind of a point where you realized that you wanted to be outside, you wanted to listen to whales, but in order to do that you had to pivot and face the bureaucrat or face the industry? And in order to do the thing that felt right for you, your critical ingredient, you had to become apt in other skills. Was is it clear to you when that switch, kind of, was made?

Alex: Well, it was kind of a two-part thing. First of all, in 1995, after eight years of writing letters on behalf of my community about these salmon farms being put in the wrong places, and these are fishermen, old–old timers–asking me to help them with this, they displaced the killer whales with acoustic

harassment devices. And I was like, “Okay, this is in my wheelhouse.” And so I published a paper. It's the only paper on how humans can make sounds that display cetaceans. But then, of course, nothing happened. It's against the law to displace cetaceans in Canada, but nothing happened. But then in 2000, yeah, 2001 a neighbor brought me two tiny little salmon, a pink and a chum. It had these little– looked like sesame seeds–stuck to them and he was furious. He wanted to know if these were sea lice, because he was a lodge owner, he said he had guests from Scotland who were fishing with him, because sea lice from salmon farms had wiped out the sea trout and Atlantic salmon. And at that point, when I looked at that fish, the first thing I did was I made a little net, and I went out and I looked in my boat. I had never really looked at the fish. And these fish were dying everywhere. They were floundering around on the surface. Kingfishers were eating them, and that flicked a switch in me, and I was like, Okay, I need to just drop everything. I'm going to figure out how big this is, why this is happening. I contacted researchers in Norway [on] how to study sea lice and opened my home, became Salmon Coast Field Station eventually. So that was the moment when I began just zooming past killer whales in my boat trying to get to the next beach scene to look at the sea lice on young salmon.

Kai: In my lab, we do a lot of thinking about what we call relational values, which are the values in our relationships with nature, our preferences, our principles and virtues about those relationships. The way that you write about your getting pulled into the fight for salmon is that a good part of it was like because of Orky and Corky, these two orca whales that you studied and their families, and a kind of sense of obligation that you had to them. Is that–is that fair?

Alex: Absolutely. So, Orky and Corky were remarkable teachers. They were captive whales from British Columbia. I was extremely naive when I was 19 and I thought I could study communication in whales in a tank, but I spent hundreds of hours observing them, and then I went and found their family. And so by now we have kind of a personal relationship. And her family, as it turns out, used the Broughton Archipelago, Echo Bay, where I had chosen little bit randomly to live and study killer whales, it happened to be their winter territory. And so when those acoustic harassment devices came on, they were displaced. And I kept thinking, are their relatives going to let them into other winter territory, or are they just like, going to be out in the offshore waters? Or, you know, what happened to them? How did they survive this? And just like my neighbors, the commercial fishermen, they didn't want to speak to government. Certainly the whales couldn't speak to government. And so, I’m like, okay, I guess I know how to do science, I know how to speak. It's my job. I got to do this.

Clare: Wow. That also makes me remember your practice as a child, you know, tracking down snakes and releasing turtles was about immersing yourself in an ecosystem so that you could understand where to find them and how to help them. And it seems similar to your scientific practice today, which, in my mind, is a combination of informal and what we might call formal scientific foundations, which combine and shape your advocacy and your ability to identify systemic problems. What you just said, I went to the grounds where these whales that I had a relationship with were, and then I found that there was, you know, this myriad of problems. Have you found over the course of your career that this combination of relational thinking, how we might call it, and more, you know, systemic science, is that combination what makes your work unique? Is it what you look for in your allies and co-advocates, this ability to think of yourself as a relational being who has friendships or family relationships to your study organism, maybe in the most cold way of speaking about it?

Kai: I need to just jump in there: you seem to develop a kind of relationship of communication and more with Orky and Corky that *few* of us have ever had the pleasure or privilege to have. And I think this question comes from wondering how much that influenced you and your work and your outlook.

Alex: Well, you know, as a young woman just getting into science, some of the things that I saw Orky and Corky do, I'm like, “Oh no, how am I possibly going to explain this?” They appeared to have rituals. They had a very deep relationship with each other, but they also seemed to know, to some degree, what was going on with the humans around them, and so this was very, very difficult. When I went into the field–and my policy to this day is “Go and look. Go and look for yourself.” And so, I am a good field scientist, but I was very, very lucky when I ran into the sea lice problem, I opened my home to other researchers and mathematical modelers came, because the system (a long channel with fish, point source infection, these lice get older, so you can see them mature)--it was just like a modeler's dream. And I did not believe these young folks that they could model the wet and wild and messy world. And so we did a lot of talking; like they would, they would model stuff, and they'd come to me and they’re like, “Is this what you're seeing?” So I had the incredibly fortunate and wonderful experience of working with them and partnering with them. I never did learn mathematical modeling, but I work with modelers. I make it easy for them to continue their work. We talk all the time. I disagree with them sometimes, and other times, I'm like, “Oh my gosh, you guys nailed it. I don't know how you did this, but that's incredible.”

So–but the act of going and looking for yourself, there's just nothing comparable, nothing at all. You cannot get it any other way. What is going on. And I love tracking things, whether it's a larval sea louse in the ocean, or whether it's a killer whale, or whether it's a corrupt bureaucrat. It's the same part of my brain that have an enormous amount of energy for that.

Kai: It's interesting. You have identified in your book a couple of key concepts that are ways that I try to teach my undergrads to think in systems, to find leverage in systems. So, one of those key concepts is that it's basically inevitable that farmed salmon in migratory paths for wild salmon, it's basically inevitable that they're going to be a major problem for wild salmon. Because you have many fish swimming in close proximity, they're going to be infecting each other. There are–they're very closely related to the wild species, which is coming by at a vulnerable point, which doesn't have any congregations of its species at that point naturally, right? So not normally exposed to that kind of disease from the adults at that point in time. And so it seemed like you were guided by this notion that it was effectively inevitable that that would be a problem for wild salmon, whether it was sea lice or whether it's one of the three diseases that was introduced through salmon farming. Whereas on the other side, the government officials, the ones that were guiding the policy at least, seemed to be working with a kind of reductionist mindset where it was like, “Oh, who knows. Let's just like, wait and see.” And then, of course, they didn't even want to see, right, as it turned out. But–but in a sense, you had that instinct, which, as a mathematical modeler (I did my Ph.D. in a mathematical biology lab)--I–when you were describing these things, I was thinking about the models, right? And I was thinking, like, “I know how, I know how to set that up. And I know that there's virtually no set of parameters that I could put into that model where the wild salmon don't start suffering badly before long, right”? And you had that instinct, and I'm just–I'm wondering where, where for you that came from?

Alex: It came from looking at the fish.

Kai: Yeah.

Alex: You know, I start at the outer river and the fish are beautiful and silvery and fine. I get to the farm and I get juvenile sea lice on them. I get a couple of kilometers beyond the farm, sea lice are now eating holes

into the fish. I get to the next farm and then they have now the older lice from the previous farm, and they have a new set of juvenile lice. And there was a spot in Fife Sound, few kilometers past the second farm that I called “The Bay of the Damned” because by the time the juvenile fish got there, they could not eat enough to keep up with the sea lice, and they were just lying around the surface dying, darkened, colored, shrunken. So you know, initially, I actually didn't think about fish farms. I–I took a job on a farm. I thought because I was always looking for a way to live permanently in the wilderness, with kids (single mom, always, somehow twice). And so I was always looking for a way to make a living, and I did try that, but once I began to look at the situation, it became incredibly clear.

Now, you talk about politicians and their unwillingness: I have an observation on that, and that is that the non-Indigenous governments have no mechanism to respond to damage to the environment. There's no laws, there's no policies, not really policies that they actually uphold. But when you work with a functioning (and they're not all) but a functioning First Nation government, you see that the ancient laws grew up in these natural systems, and the humans *depended* on these fish surviving, and they *do* have mechanisms, and it's *completely* different. So it's quite frightening to have worked so long with the–Canada and the province of BC–and have politicians say things like, “Oh, we *did* leave a migration route free.” And I'm like, “No, look at the map. Fish would have to climb over Gilford Island on land to not go by a farm.” And he would say, “That's your opinion.” I'm like, no–no, no. The point where you know you're just like, “Is now the moment I get up on the table and just scream?” No, I never did that because I know you can only do it once and it didn't ever work. But [**Kai:** Yeah] it was *so* frustrating. And so we are at a very dangerous time because these governments that are in control don't–don't calculate in the oxygen we're breathing, for example. [**Clare:** Yeah] Something important…

Clare: I think, too, I'm not a mathematical modeler. I did–I did not do a graduate program in a lab that does that, but I'm also someone who goes and looks. I have the privilege of being a fly fisherwoman and so I'm looking at fish a lot. I love fish, and what I know about fish I studied and then I confirmed by going out and looking. And you know, in my hours on the river, I think a lot about how I'm surrounded by researchers who either don't have the ability or the privilege or whatever it is to go and see what it is that they're speaking about in person. And I, I've been reflecting about it as in the same way for politicians. I wonder if you have any insight about the role of yourself or others as brokers between people who can go look, who can check and can confirm whether or not something is true for the researchers or for the government. And if you feel–I mean, you've said that there's not space for anecdotes or stories or feedback that says what you're saying is actually not the case. But is that sort of the direction that you have built your life in, which is reporting from the field essentially. Here's what's actually happening, here's the evidence for it, and I'm trying to make it so obvious to you that you can't continue to ignore it. Is that our role as concerned researchers or civilians to the government, or is the government supposed to go look as well?

Alex: Well, the government should look because they're not going to believe what you find, unfortunately. But in answer to your question: so when the sea lice issue hit, I'd already been into this like 12 years of trying to talk to obstinate politicians, and so I put a call out to universities and said, “Anybody that wants to study sea lice, you can stay at my house for free.” Which, you know, Echo Bay, you have to get there by speed boat, there's no ferry, there's no electricity, it's hard to set up. So there is an advantage to making it easy for researchers, giving them a platform. You know–all–Jane Goodall did this, Diane Fossey did this, all of the people that have gone into the wilderness and studied animals and discovered amazing things and had a fabulous time eventually run into a problem, and they're like, “Hey, we need some more researchers, we need some more scientists.” And my home came– became Salmon Coast

Field Station and, you know, made lifelong friends from the very first students that came there. And so, I mean, it's kind of a long story but government and industry were beating on all of us in various ways, destroying our careers. So we banded together and we were able to share observations, which doesn't mean that I was influenced. There was a lot of arguments, but there were honest arguments about what we were seeing and how things are. There's still things I disagree with them on, but I respect everything, and I'm like, "Okay, I'm missing something there." And so that fabulous dialogue that happens in an honest environment is it's, you know, two brains always can think of something more than one brain and… But one of the difficulties with the big institutions is they get funded by people who are often tied to, if not the very problem you're fighting, then at least the culture that's causing these problems. The–you know, people that own the oil wells and the mines and the forestry companies and the fish farm companies, and they have the money, they decide where research goes. And so everybody in this fight had to be very careful. And in the end, once I turned to activism, out of just–I'd gone through the courts, the science on and on–government processes–I turned to activism. And, you know, they had to distance themselves from me. We have finally been able to reunite in public, you know, in–on papers– but that's a frightening thing because then suddenly, industry is telling people who they can associate with and who they can be seen with, and what is true and what is not true. Therefore, yeah, it's very dangerous.

Kai: It's a good place for us to go next is thinking about how difficult this was and how you managed to make your way through it despite all of the efforts at suppressing you and your science. And so because we're talking about this kind of in the abstract–I want to–I want to drill into one of the stories, one of the anecdotes, and tell that story all the way through. So I've tried to piece it together from–your book does a great job of laying it out there–but you know, for folks who are not used to reading about these viruses, it's–it's challenging. So you tell the story of salmon flu virus or ISA virus in *Salmon Confidential*, and then you also tell it more fully in your book. And–and I wonder if we can go through the kind of sequence of efforts to suppress and–and discredit your science and make you– make you look crazy, right? And so from the outside, it's–it's true. As a scientist, I remember seeing that you had reported this, this virus, and then the government officials had not found, you know, had had, in their words, they had *not* been able to replicate your findings. And I remember thinking, "What–what is going on there," right? And this wasn't the first time and it wasn't the last time I think that that this happened. But you unveiled, eventually, how that happened. And can you–can you explain it now here?

Alex: Sure. They actually won that round, but in some ways, I won, I guess. So, there was a commission into the collapse of the Fraser River Sockeye and I was invited to be a participant and got access to, like, half a million government documents. That was my first look on the inside of DFO correspondence. And in there, I saw that a fish farm company had ordered a huge amount of tests for this virus. Suddenly in–I think it was 2009–well, that piqued my interest, and so when the commission was over, I found a virologist who would work with me in Eastern Canada. He was the reference lab internationally, on the world stage, for infectious salmon anaemia [ISA] virus, and I began sending him samples and he began getting positives. Well, he might have told me a little bit about how this works when you find a reportable pathogen. ISA virus is reportable internationally, which allows countries to prohibit transfer of stock that's infected without facing trade law ramifications. The Canadian Food Inspection Agency confiscated our samples and claimed that they re-tested them, and they eventually got the lab I was working with *stripped* of its international standing as being the reference lab, saying that it was "probably contamination." But through an amount of sleuthing, I found the West Coast Canadian representative for the Canadian Food Inspection Agency. He somehow was in Alberta, and he hadn't gotten the memo. He just said to me, "Oh, we never re-tested your samples." I was like, "Wait a minute.

No, excuse me. You know who you're talking to. This is Alexandra Morton. These, these samples from this lab" on this. He's like, "Oh, yes–we, we, we put them in alcohol," which means that they could not be sequenced, they couldn't be cultured. And–

Kai: But there were, there were news reports right, that–that they could not confirm your findings [**Alex**: They were all over the media] that they had and that they had failed to find it right, which intentionally made you look like you were in the wrong, discrediting not just those studies but you as a scientist in ways that made it *very* difficult for those of us on the outside to be able to tell, you know, fact from fiction.

Alex: That's when people started to distance themselves from me. But–I have to say, so the fish farm industry, of course, would not let me go to the farms and sample farm salmon. But, oh, there they are in the supermarket, fresh on ice, pretty good sample, not the highest quality, but pretty good. And when–when I started testing from, you know, all the supermarkets, I got it quite often, we got positive results. We sequenced it, and the BC strain FYI was slightly different than all strains in the world, so therefore it was not contamination because there was a *unique* component to it. Anyway, as the years went by, I got fewer and fewer and fewer positive results out of the supermarkets, and I think the salmon farming industry got alerted to their own problem by these tests by a lab that, by the way, when the virus hit Chile, that's the lab they went to as well. And I don't want to name him, because the poor guy, just–you know, he suffered so badly from this–and I feel terrible to this day, But I was completely ignorant. I wrote to every member of the World Animal Health Organization and said, "You should ask for the evidence that this–that these test results are wrong." Not one of them answered me. They didn't, you know. So it does worry me about the spread of pathogens across this globe [**Kai:** I'm sorry]. But in the end, the virus extinguished in the supermarkets. So something happened and–and so maybe, maybe we did thwart an outbreak of this disease.

Kai: But other diseases went on and played really important roles in undermining wild salmon populations and–and again, it sounded like you saw that coming with another one of these key concepts, right? That from an evolutionary perspective, if you take a large number of fish and you put them in the– in a pen together so that they can't help but infect each other with the diarrhea that you report that the other fish are basically eating, right? And then you harvest them at an early age, before they're subject to any kind of selective pressure other than the bullying and harassment that happens in those pens, then you're basically assured to have virulence evolve more strongly, right? Which may not *initially* or even *eventually* have catastrophic–catastrophic effects on the farms themselves, but for wild salmon who need to live a long life, who need to escape predators and make it all the way, you know, around the ocean and then back up the river, 1000s of kilometers in some cases, sometimes they are too weak to make that whole journey, right? So you documented that many of the fish that were dying in the river were actually quite sick with one of these viruses which–or more.

Alex: Yeah, the piscean orthoreovirus, which actually is from the North Atlantic, which is an insidious virus, because opposed to ISA virus, which is acute in its effects, PRV (as we call it), is–can be chronic. And so fish–it can exist in a carrier state in a fish until something else happens, like high water temperature or intense predation or, you know, any number of stressors.

And yeah, so I mean, the other person that took a beating on all of this is Dr Kristen [Kristi] Miller in DFO, who engages the incredible technique of genomic profiling. And so when Fraser River Sockeye were dying in *massive* amounts, sometimes over 90% of individual runs just before they spawned *in* the river, so you could see the fish, and nobody could figure out why they were dying, she went in with

genomic profiling. And so she was reading the immune system of fish, and the signal was a viral leukemia. And wow, that set her back on her heels, like, what's that? Then she searches the literature and oh, the salmon farms in the Discovery Islands right out in front of the Fraser River, where the juvenile Fraser River Sockeye are swimming, every generation were heavily infected with salmon leukemia virus, which was discovered by DFO, covered up, never sequenced, and so she suffered enormously. But like the case with the ISA virus, the salmon farming industry took out all the Chinook farms which–they were the carriers of this disease–they took them all out of the Fraser Sockeye migration route and the pre-spawn mortality in the Fraser River stopped. She should have gotten *enormous* credit for that. She deserved an Order of Canada, this is the most valuable salmon river *in the world*. But instead, her door was locked and tape was put over her mouth. She survived, though, and she's doing amazing work now, so.

Clare: Wow, I can't–I can't help but ask (and maybe this is my own youth and naivete showing here) but in the institutions that, in my opinion, are meant to serve us (our government), how is it possible that so frequently they seem to fall on the side of the wrong side of history (effectively, the bad guys)? How is it true that there are good actors at DFO and yet the arc of their actions against you and others, seemingly repeatedly, until very recently, put them on the wrong side in terms of defending fish and ecosystems and people and livelihoods. How can that be true?

Alex: I've thought about this a lot like, “Why? Why don't they just do the right thing and make the people happy and so we continue to pay taxes and thrive?” And I think with the salmon farming industry, it's something I can't see. It clearly is something I cannot see. I mean, is it? All the companies in British Columbia, except one small one, are Norwegian based. So I have to wonder if it has to do with oil extraction. I mean, did Canada go to Norway and say, please come and dig here or drill in these dangerous spots on the East Coast? And did Norway say, sure, but throw in the BC coast for aquaculture? It's something like when you go into the Access to Information Act, you cannot access the ministers’ and the Prime Minister's Office, which is where a lot of stuff is happening. You can only access the bureaucrats. So I don't know why this is, but it's an *extraordinarily* dangerous thing, and I've seen really good people get elected, and it happens to them. So there's something behind the curtain that we can't see that is forcing them to do these things. Now they're never *really* forced and things are getting so critical now we're going to have to see somebody break away and stand up for life on Earth.

Clare: Yeah, you ran as a–as a candidate for the Greens in 2020. Was that you knowing that there was more behind the curtain and wanting to peek? Or just, you know, somehow having this incredible optimism in a system that had failed you so many times and trying to, you know, put your foot in the door?

Alex: No, it was none of those well thought-out things. I actually was preparing to drive–this was during COVID–and I was preparing to drive to the East Coast, and I simply wanted to park my car in front of the Fisheries Minister's house while she made the decision whether to close the farms in the Discovery Islands. I know we couldn't meet because of COVID, but I just wanted to bear witness. I just wanted to be there. I just wanted–I just–I didn't know what else to do except go and look at the person who was going to make this huge decision.

And Elizabeth May phoned when I was packing and I thought, “Okay, well, maybe I should try this. You know, maybe I should try entering the system that I've been fighting for so long.” But of course, you know, as a Green Party candidate, the chances are so slim. However, once I got involved in the process, it was so interesting, because people will talk to you when you're–when you are a candidate. And I said,

I called loggers and fishermen and nurses and doctors and elderly–everybody I could think of. I said, "What do you need?" And they all knew. They knew what they needed. They were brilliant. I kept saying, "Oh my gosh, if I–I'm probably not going to be elected, but you should do that." Like the loggers said, there's too many layers. There's the government, there's the companies, there's the contractors, there's the workers. We don't need the companies. We just need the government, contractor, worker. It was just, yeah, it was very interesting. It–it opened my eyes to the brilliance of people, actually, that somehow is not getting out through the government systems that we have.

Kai: So this–there's something else that you're mentioning there: David Boyd, who we're going to interview next, in his book on Canadian law and policy, which is called *Unnatural Law*, i's a beautiful book from 20 years ago. He–he demonstrates, across the whole range of environmental law and policy in Canada, that there is a *huge* bias, a kind of cultural and systemic bias, against regulating industries strongly, right? And so, in a way, that makes me think that DFO wasn't really choosing between wild salmon and farmed salmon. They didn't. I don't think they saw it that way. I think what they saw was they were simply taking a hands-off approach to interfering with farmed salmon. They did not want to interfere with an industry directly. And the negative externalities of that, they–they don't see as their primary mandate, right? So I see DFO as being like, "Okay, we'll let the industries do their things, and we'll worry about–we'll let somebody else worry about the negative externalities." So by *negative externalities*, I mean economically consequential decisions, economically– economically important consequences that are not integrated into the cost of business. So in this case, for farmed salmon, wild salmon, and the loss of millions of wild salmon to diseases and sea lice were a negative externality that, in a sense, they were not attending to because their first responsibility is to the industry that is subject to regulation, you know, and so not, not like wild salmon or farmed salmon, just like hands-off regulation.

Alex: Uh, just so on some level, that's true in that, so when I really began to look at them, they never did protect salmon. They didn't protect them from the fishing industry. The big players never protected them from logging, mining, or salmon farms. But they wanted to look like they were protecting them, and so they went after the small guy.

You know, when I first found the sea lice, I called DFO and they said, "Oh, could you get us some samples?" I was like, "Oh, wow, this is great! They actually want samples." So I went off and I got them samples and I took my speed boat the hour to town and then jumped in my car and drove the four hours to this research station, gave it to them, and they showed up at my door, a person with pistols in her belt, to *charge me* with poaching. So the same with the small individual commercial fishermen. [**Kai**: Yeah] Yeah, those guys do need watching, absolutely. But those were the ones they went after. Those are the ones they actually fined and charged. They never charged the company. So I don't know what it is that makes that happen, why it's always about industry? Because when you're dealing with salmon, it's so valuable a creature, it's valuable for fishing and valuable for its ecological contributions, and it's *hugely* valuable to tourism in many formats. And yet they don't *see* that value because nobody owns it, and so they're actually assisting things that are going to die off themselves because they are so greedy.

Kai: It's indirect. It's too indirect for the institutions that we've erected. They are principally seeing the world through a very short-term, myopic lens. Which brings–

Alex: But the other thing, Kai, is they're–they're *actually* lying. There's, there's people–

Kai: No, absolutely! No, they're *using* that lens to justify all kinds of actions that *can't* be justified.

Alex: No, no. There's an ethics investigation right now going on regarding DFO's "science" towards aquaculture. So I'm very curious how that's going to work out!

Kai: Yeah, I wonder. So taking–pivoting from what we've talked about with respect to salmon in particular, zooming out to think about the implications, more broadly. In the *Cultivating Conservation* podcast and in others, you've talked about the power of occupation, just like standing in the way, and–and I can see for sure how that served as a *crucial* mechanism to protect wild salmon in this beautiful part of the world. On the other hand, when I look across *all* of the problems that we're facing, you know, I'm thinking, I think in the dozens of major environmental problems, and I don't see the same kind of successes happening there. Often there's not a clear cause of the decline, right? Like this farmed salmon happened to be such a clear part of the problem for wild salmon. Often it's not like that, right? And so it's like, what then do you occupy? And then I think that's–that's where we need to change the institutions. That's where we need to change DFO from the inside, so that they're *not* acting in this way, so that they're *not* just protecting the biggest–you know–being hands-off to the biggest industry that they can find, but rather actually being forward-thinking in protecting these ecosystems that are the crucial lifeblood and future of this province and country.

Alex: Do you think we can change these institutions? The only way I can think of it being done, and I thought about a lot, is to simply infiltrate them. Put people who, who *do* understand what is going on, and the stakes, and have the guts for goodness' sakes, to get fired–whatever it takes. Because, you know, there were people in DFO that were–there was this one man I was talking to, he saw the sea lice problem and he got so angry he was actually hitting the dashboard of his boat with a ruler, just like *whipping* it as he talked. He was so furious, he couldn't contain himself at the damage to his career for understanding that sea lice from fish farms were killing off the wild salmon. This was a very good man. He'd quit, you know, he'd walked away.

And so the thing about occupation is, if enough people do anything, *governments will change.* I don't know, we never know. Is it–it's more than 10 people for sure, it's more than a couple 100. But will it just take so many people just sitting themselves down, surrounding government, and accepting arrest–I don't know–but we're at such a crucial point in our planet, and how is it the governments can't see that we are not going to have air, food and water? How is it our governments got us to a point where our hospitals are closed, nobody can find housing, they can't afford the food? Our ferry quits running, for goodness' sakes, because there's not enough people to run it. How is it they didn't *see* these problems coming? *Oh, they must have*.

And so, I do believe in individual action. I do believe, you know, for example, the whole idea of releasing carbon; I personally consider whether I am going to release carbon: is that, is that drive to town *really* worth the carbon I'm going to put into the atmosphere for the next 100 years? And people say to me all the time, "Alex, you don't matter in that equation. It's so little." I'm like, "Yeah, you know, you don't get it. I *personally* don't want to put that carbon out there. I don't want to do it." And I think that–that is the switch that's going to have to flick in a lot of people and just say, "Okay, I know I can do that. I can fly off for a weekend in a faraway place to go around and be wowed. But should I do that?" There's a million things that we face, from food to transportation to everything we do that we can all make that change. And once you decide to take accountability for that, then you demand it from your politicians and your teachers and your lawmakers. It's the test of our entire evolution right now, whether we have this capacity to understand where we are and to pivot from, "Oh, I can do it" to "How is that going to affect things all around me and the future?"

Clare: I think one of the tasks of being a young person and resisting being nihilistic about the environment or our shared future on Earth is, is looking for stories like yours and others, and focusing on how special of a turning point I think we're at. We're seeing the Klamath River being undammed and fish are returning. Same in Victoria. Fish were seen in a river that hasn't seen them for–for seven decades or more. And spending time with those stories and sharing them and understanding the strength of connecting over this, maybe a shared sacrifice, or maybe an opportunity to connect and understand our kinship to one another and to the earth. It's like, that's been my focus, I think, the last couple of years, is looking for opportunities to occupy, whether it be the literal act of standing in this slow labor of taking up space so that one is noticeable and their cause is seen, or the longer labor of across our whole lives, there's so many opportunities for intervention.

Alex: Just on the occupation: you actually just want to get in the way. It's not actually to be seen anymore. Because I also led a whole–marched all the way down Vancouver Island, ended up with 10,000 people on the lawn at the Parliament Buildings. And didn't do a darn thing, except we got to know each other, and that helped in the end, but–but, yeah.

Kai: So you talked about the importance of personal action. My lab is really strong on pointing to the limitations of relying on individuals to act in their private sphere. So I *absolutely* believe in individual action, but in order to accomplish the kind of transformative change that is necessary to save not just salmon, but *all those other* species that are getting threatened and whose populations are being lost based on the governments that are *overly* protecting industry in a sometimes malicious, often untrue way. The answer is for individuals to act not just as private citizens in terms of their carbon that they release to the atmosphere, but also where they work to directly change systems and where they signal their values consistent with that. And so hopefully you, in your life, not–not so much just on the avoided flights but in the way that you have doggedly pursued the truth and protected this ecosystem that's so important to salmon and orcas and people, I'm hoping that people can draw inspiration from that to see how they can change these systems at a deeper level. Because I absolutely *do* believe that we can change DFO, right? It–it'll–it'd be hard because there are lots of folks there who are habitually used to operating in that way. But you know, all systems can change, right? You just need the right people in the right places to change the logic as to what makes for a good decision, how the agency articulates its purpose, and how it measures its progress towards that purpose. It's just a matter of time.

Alex: Well, I mean, interestingly, we had the remarkable Minister of Fisheries, Bernadette Jordan, who closed down all the salmon farms in the Discovery Islands. It was, like, absolutely explosive! Said–told these three Norwegian companies who'd never been heard–heard the word "no" in Canada–that they were going to close 17 salmon farms. And–and then Minister Murray, Joyce Murray, who followed her, she kept them closed and well, Bernadette lost her seat and Joyce was removed as Minister of Fisheries. So–and I mentioned these two women and I would mention them if they were men–as much as I can, because I don't want what they did forgotten. That's what we have to strive for and support.

And you know, I agree with what you're saying: an individual action is only a small thing. And one of the big mistakes I made early on in this fight was that I thought I could fix this myself if I just worked *tirelessly* on it. But that's not true, as you mentioned. It does take a community; in this case, it took First Nations leadership, which, honestly, I–nothing would have changed today without them. They have the power and when they use it, it's just–it's *spectacular.* But then there's that personal choice you have to make, and you have to decide how deep you're going to go with all these changes. And you have to, you know, just figure out your own balance with it. But each of us have a sphere of influence and what we do does influence our friends and neighbors, even if they don't overtly do it. You might hear them [in]

six months saying, “You know, I really thought about that thing you said on when we met in the road there and, and you're right and I started doing the same thing.” And so that is super important.

The other superpower that exists is just the sheer act of kindness. I also didn't see this. I mean, most of the advice I have to people is things that I didn't do and didn't know were powerful, But if somebody is struggling with dealing with whether they should act or not, don't be impatient; just be kind because that changes a person's internal chemistry. It makes them so much stronger, and that's– that's what we all need to be, is confident and strong. I was very lucky: I didn't have a lot of weight dragging me down.

Clare: Yeah, I love that. I grew up with parents who–who emphasized to me, I think kind of like the mantra of my family was “Kindness matters.” And so it's, you know, it's playing in the back of my head. And I'm from a place where I'm *diametrically* opposed ideologically with many of the people who I spent time with, and–and yet I find those conversations are some of the most fueling. To know that there's still space for–for discourse and disagreeing–and then eventually, change. I really believe that–I agree that's one of our greatest superpowers, and it's this myriad of tools being kindness and individual action, collective action, occupation, using the courts, believing that there's a justice who will interpret the laws in such a way that it is fair and kind to all the communities, human and non-human that are involved, and we see so much of that over the course of your career.

Alex: Well, I won every lawsuit but it didn't do a thing! However, enormously grateful to Ecojustice because it did lay a groundwork, of course, and they’re still–we are still in court together. But I–I admire the young activists today. I mean, I don't even know what to call them/us because an “environmentalist” is actually a job description, but this is way more personal. And the bravery and the thinking and the choices that are being made are just amazing. I love the quote by Paul Hawking: “We are the immune response of the planet.” Well, that means we're on the Big Team. That really gives me confidence and in a sense of camaraderie that we all need to proceed into dangerous territory.

Kai: It's so funny. I love–I love that saying and I love your use of it too. I just wrote a chapter about cultural ecosystem services, which is basically how we derive benefits but also contribute to these ecosystems, and–and my logic is there that cultural ecosystem services, the way that nature makes us fall in love with it, basically that–*that's*–*that* is its self-protection, right? *That is* its immune response. They–we are being employed, in a sense, by nature, for its own protection, including for our sake. It's not, it's not selfish, like on the part of nature, right? It's–it's for all of us.

Alex: I know, I like, I thought about why do I think that's beautiful? What is it about that–I don't–I still don't know, but there's some kind of balance and healthiness that makes me love that mountain range at sunset or that beautiful flower with the dew hanging on it and…but, yeah, no, I definitely feel like I work for this one area, Broughton Archipelago, and she's a very tough boss but…

Kai: It seems like she also sustains you, though, right? I mean, when–when Clare and I were talking about all that you'd been through, right, with being followed by that boat with the tinted windows and the folks carrying arms, right? The intimidation, the harassment, the oppression and suppression, like it– and you've been at it for *three decades* without drawing a regular salary. It–*most* people would crumble. But [**Alex:** Yeah, yeah…] we hypothesized that, you know, especially hearing you talk about that moment watching the pink salmon come back, the healthy runs after the closure. It just felt to us like it's nature that is sustaining you. It is making you *impossibly resilient* in a way that most of us in our city-dwelling lives can't even imagine the strength that you can tap into.

Alex: Well, just on that point: years ago, this old fisherman, Billy Proctor, who was in many ways a mentor to me, I asked him once why trees sometimes fall in the forest on dead calm days because I would hear that. And he said, "Oh, that's because sometimes it's the wind that's holding them up." Well, when those farms got out, I fell and–and I thought I was immune to depression and…I just want to say these things because I don't want people to feel like if you become depressed or you–you go through a very, very low spell where you're not doing anything, don't–don't feel badly, just heal yourself. And so, for a whole year, my mantra was, "Healing is the work now, healing is the work now, healing is the work." And I actually built a small farm to promote food security on my island, but in the process of growing food, you know, that was very, very healing because I could see the results of my action. I just don't want, you know–one thing that's very hard to have to hear towards that last stretch there before I collapsed, was people saying, "Don't give up!" You know, "Keep going! You're our hero." And I just like, "Where are you? Don't rely on this person who's getting older and older and older. You need to step up. *Don't be behind me, be beside me*." And so, yeah, there is–there is a limit, absolutely.

And in terms of not drawing a paycheck, this is a remarkable thing. People just kept donating money: $20 bills, $100, it just kept coming in. And I thought, "Okay, well, when this ends, I'm gonna stop" because I was raising kids, you know? I mean, there's some level of responsibility there. [**Kai:** Yeah] And I was almost looking forward to it stopping so I could just take a break, but it never stopped. And so that was an unusual circumstance, and that's because the salmon farming industry, stupidly, kept trying to humiliate me publicly. And this created this kind of folk hero feeling about me that people were very, very kind. And I've had people in the grocery line-up pay for my groceries. Just like *little* things like that. So yeah, that kept me going. And thank you to all those 1000s of people over the decades who did that.

Kai: One of our hopes with this podcast is that we inspire more folks to stand up and *not just* to provide the information, right, but to be *part of that resistance*, to put their names on it and just stand up for what they believe in. They knew that you were on the right side of this fight, and they wanted to contribute, but it takes more than just one.

Alex: Yes, and it is very difficult to stand up, and I totally recognize that, but people can always figure out something that they can do, and I suggest that you do it. Because here's the thing, *it feels good.* Once you stop being the victim and you start pushing back, even at a small level. There were times, you know, like driving those fish samples through the mountains, I just felt–had the music turned up in the car, and I just like, "*Yes, I'm making this happen!*" No, but it felt at the time that I was. Or roaring across a beautiful morning in my speed boat, you know, to check out something at the farms. Or that time that a friend of mine drove me up alongside a fish farm–Port Elizabeth in Knight's Inlet–and I just *stepped* on it to occupy it. *Oh my gosh, the feeling! It's a full system change and it's very healthy.* And so, I mean, obviously I suggest you–you be careful and don't go further than you can. But it *really, really* is what you need to do and once you start doing it, you'll–you'll know. They're just like anything else–eating healthy, sleeping properly–pushing back against the destruction of this planet *feels good.*

Clare: Yeah. Excellent reminder that it's your advocacy, but it's also your life. And what we've discussed today, it's your career and also just your–your existence, and it's all of ours. And I think, reminding ourselves of our humanity and the cadence of—of what we do day to day is–is not only our "work," we can call it that, but it's our–it's our everything, you know.

Kai: Alex, I wonder if we could just close on an optimistic note, because as you wrote–or no, I heard you talk about elsewhere–the pink salmon are coming back right? And, and so I wonder if you can just walk us through one of those moments where you watched them swim by and just how good that felt to–to

have that moment of…recognition that what you had labored towards *did* come to pass, and nature *did* recover in that particular case.

Alex: Yes, and it's not just the pink salmon now. So, I first realized the advantage that these fish were taking with the removal of the farms last summer when the Fraser River pinks came back in numbers that nobody had seen before. The Pacific Salmon Commission test sets were the biggest in the history of doing test sets. And I live on the edge of the ocean, but I drove out in my boat and drifted in a tideline, and the little fish were going, "plop, plop, plop, plop, plop." And then this whole family of killer whales comes through. And I was floating on a *river of fish*, a river of fish who had not been covered in sea lice and disease when they were going the *other direction* as babies. And I had looked at them, and I had written a scientific paper on the fact that they had 96% fewer sea lice in the same area they used to be dying because the fish farms had been removed. And then *this* year, *oh my gosh*, it's not just the pinks, it's the coho, it's the chinook salmon, and it's the chum salmon, or the dogs that come in late and the the orca that I work with–the residents, the fisheaters. They arrived in this area on July 3, and they were here last night, December 9: they are so appreciative of the massive amount of fish that are going through these waters. And it's just, *it's an incredible feeling*. I'm so lucky because there are many people who have fought environmental battles for their entire lives and were not allowed to win. And like I said, I would not have won this had there not been this *extraordinary* set of circumstances that ended up in the occupation and then the leadership of three First Nations getting in there and *wrassling* government under control and getting rid of the farms. But to think that I had a role in this–is–I really don't know what the right word for it is. It's very close to the first time I saw my babies after they were born. It's that kind of, like, world-cracking [**Kai:** Yeah] moment where you realize you're part of nature, and [**Kai:** Yeah] these fish are surviving because of something you were involved in. It's really–I'm so grateful to everyone involved and to these brave, remarkable fish.

Kai: Wonderful. Thank you *so* much. You are an inspiration to us and to so many people. We are so grateful for you coming on for this wonderful conversation.

Alex: Thank you very much for your work and for giving me this opportunity. To all the activists out there, I just want to say: take care of yourself. It's not your first instinct, I know, but it is. You're in it for the long haul, sleep, eat, forgive yourself. Just–you really want to build up your endurance.

Kai: Thank you, Alex.

Clare: Thank you so much.

Emma: And now for a short message from one of our conservation allies:

[*Medley of Waterbodies theme song*]

Colleen: False Creek matters a lot to me just because it allows me and others to really connect with nature, even though we're living in a giant city.
Fin: We're fundamentally connected to the water bodies and the surroundings that we're in.
Michelle: Blue spaces in particular are good for our mental and physical health.
Zaida: Welcome aboard! I'm Zaida and this is *Waterbodies*, a podcast from False Creek Friends.
Matt: The reality is that False Creek is actually quite alive.
Kai: How do we navigate the protection of these places that we love?

Mutuma: What do you imagine False Creek might look like in the next 10 to 20 years?
Eli: False Creek can become a beacon and a place to showcase the conservation efforts that are happening throughout the rest of British Columbia.
Soudeh: What it means to be a steward of a land.
Mendel: Watch, listen and subscribe to *Waterbodies* wherever you get your podcasts and visit falsecreekfriends.org to learn more
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[*medley of Small Planet Heroes theme song*]

Maia: Thank you for listening to this episode of *Small Planet Heroes. Small Planet Heroe*s is a production of CoSphere, a project of the University of British Columbia. UBC is situated on the unceded territory of the Musqueam First Nation. Our guest this week was Alex Morton. Check out our show links in the episode description to learn more about their work and other ongoing projects. *Small Planet Heroes* was created by our Executive Producer, Dr. Kai Chan. This episode was edited by me, Maia O'Donnell. Production is by Maia O'Donnell, Sam Blackwell, Emma Jarek-Simard and Clare Price. Your hosts this week were Dr. Kai Chan and Clare Price. Our show coordinators are Clare Price, Sam Blackwell, Maia O'Donnell, Dr. Nancy Kang, and Emma Jarek-Simard. Special thanks to Jai Ranganathan, Bilal Bartai, Elizabeth Ye, Katie Kathiresan, Dr. Nancy Kang, Anahita Seraji, Dr. Sarah Klain, and Zaida Schneider. Our theme song was written and performed by Daniel Forrest. Our interviews are conducted and recorded at UBC Studios. If you would like to join our community of small planet heroes, check out cosphere.net. Thank you for listening.

Selected Links to Things Mentioned or Discussed:

Raincoast Research

The Access to Information Act

Displacement of *Orcinus orca* (L.) by high amplitude sound in British Columbia, Canada

Salmon Coast Field Station

Editorial overview: Relational values: what are they, and what's the fuss about?

Pathogens from salmon aquaculture in relation to conservation of wild Pacific salmon in Canada

Salmon Confidential

Declining Wild Salmon Populations in Relation to Parasites from Farm Salmon

Recent failure to control sea louse outbreaks on salmon in the Broughton Archipelago, British Columbia

Ecojustice Canada

What if cultural ecosystem services were relational? A research agenda for nature's contributions to well-being – and human action

Effects of government removal of salmon farms on sea lice infection of juvenile wild salmon in the Discovery Islands

Sarah Klain

Fisheries and Oceans Canada

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UBC Studios

Executive Producer Dr. Kai Chan

Production and show coordination by Sam Blackwell, Maia O'Donnell, Emma Jarek-Simard, Clare Price, and Dr. Nancy Kang

Editing by Maia O'Donnell

Theme song by Daniel Forrest

Transcripts by Sam Blackwell, with the help of Otter.ai, and with Dr. Nancy Kang