

The following pages include condensed transcripts from interviews with five different individuals (conducted during the spring of 2021) whose roles provide unique perspectives on the impact of non native salmon farming:

1. Drew Cherry (Editor in chief for Intrafish)
2. Kurt Grinnell (former Jamestown S’Klallam Tribal council member, Commissioner on the Northwest Indian Fisheries Commission, and VP of NWAA).
3. Alexandra Morton (biologist, activist, and author living in British Columbia)
4. Jeanne McKnight (executive director of the Northwest Aquaculture Alliance)
5. Jim Parsons (General Manager, Cooke Aquaculture Pacific and President of NWAA)

INTERVIEW QUESTIONS:

1. Can you tell me a bit about your work?
2. From your perspective, is salmon farming a sustainable industry? How so?
3. Is there anything that the industry should be doing differently?
4. You’ve had some backlash in relation to your pro-salmon farming points of view. Can you describe your understanding of who embraces salmon farming, who rejects it, and what helps to shape those stances? Have you always been pro salmon farming? (if not, what caused the shift in perspective?)
5. If you could imagine a healthy Salish Sea, what would that look like?
 - a. how is the health of the Salish Sea impacted by the industry? by what happens in other areas of the world?
6. How stable is the salmon market? (e.g. how have prices been affected by the pandemic, and/or other recessions/etc). What impact does this have on the ability to engage in sustainable practices?
7. What other species might salmon farmers look to expand into? Where do you see the industry headed?
8. What does the salmon farming company of the future look like? Predictions for the next 10-20 years? What changes would you like to see?
9. Which technologies will we see growth in (e.g. land-based, offshore, sub-sea, net pen)
10. It seems that from an industry perspective, questions around the efficiencies of different technologies are at the forefront. Is sustainability, as it relates to the impact of these more efficient technologies, a part of this conversation? (If so, who is driving these conversations? Who is at the table, so to speak).

11. Do you see much collaboration between indigenous and First Nations stakeholders, on either side of the border, when it comes to industry standards? (if not, should there be more input? what might this look like?)
12. How is the industry responding to sea lice infestations – what improvements have been made, where is there room for growth?
13. How is the industry responding to the impacts of climate change? Who is leading this response? (e.g. harmful algal blooms HABs like the “Godzilla” HAB of 2016 in Patagonia; the “blob” of warm water in Alaska/BC)
14. What drives sustainability? And what role do consumers have in these decisions? Is there an appetite for sustainable research and policies within the industry?
15. How important is it for a company to be seen as sustainable? How is that label managed? What are the standards for sustainability?
16. Many companies tout themselves as being sustainable – how do you think that term is defined in practice?
17. How are companies held responsible for sustainability? (are there ways that sustainable practices could be better enforced? Whose responsibility is that?)
18. What are some of the key signs of progress in terms of fish health, biology, and genetics?
19. In practice, do you see efficiency and sustainability being compatible?

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Drew Cherry Biography:

Editor in Chief, Intrafish

https://www.intrafish.com/author/d_cherry

“Drew Cherry is the Editor-in-Chief of IntraFish Media. He joined the group as a business reporter in 2001, and has lived and worked in Norway, London and Seattle covering all aspects of the seafood industry, including aquaculture, fisheries, markets, finance and sustainability”

Excerpts from Drew Cherry Interview:

“I think when I started to get a more nuanced view was when i went to visit farms up outside of Campbell River and I at least started to understand more on the technical side of how it functioned, because I think on the outside portrait of salmon farming, depending on your political spectrum or depending on your view on it, or you economic point of view if maybe you’re a wild salmon fisherman, it’s easy to think of it in kind of really broad strokes, because in the Salish Sea, and in this area, we really really, salmon aren’t just part of an economy, they’re iconic, they’re part of this whole region and who we are. Salmon is something different, you know it’s like the blood cells that run through our veins in that way and so I think that salmon farming and that notion is you know, is kind of anathema to that, it’s taking this wild and to some people, you know to First Nations and some of the native tribes, most of the native tribes in Alaska and most of the northwest coast, salmon was beyond just, you know, it has spiritual significance as well. So to go from that and to see that salmon farming is basically farming right, that it’s like raising chicken or cows or whatever, that took a little bit of a switch for me to understand but what I did begin to see, I saw that it’s not just people throwing a bucket of scraps to a fish, because no, it’s very much a business, and that means they are trying to do it as efficiently as possible and i think seeing that, and then seeing some of the operations and how they have advanced over the years and gotten more efficient and more environmentally friendly - but I would get blasted for that and I don’t really like that term because it’s vague - but I think I began to see, ok this is a little more subtle than that. There are coastal employment issues - I just brought up Klemtu - so Klemtu has all the issues that any rural coastal community would have, a coastal primarily native community would have. So high unemployment, alcohol and drug problems, problems with brain drain - when you get awesome people they want to leave, they don’t want to stay in Klemtu, there’s not great jobs there. And I’m speaking in broad strokes, I don’t know Klemtu that well specifically. So I think that over time, coming from a coastal community, the notion of sustainability is something where there is nuance to it when you look at it from a business perspective, and even like an economic jobs perspective as well. Now the sustainability from an environmental point of view, that can be argued a little more, it’s improved dramatically in the twenty years I’ve been covering salmon farming but by no means is it where it needs to be, and in particular, in the pacific northwest, can you do it sustainably, yeah, I think

it's being done relatively sustainably but you are raising a non native species and that does come with potential impacts, with escapes for example, which happen. Just off the coast of Washington there was a big farm collapse a few years ago, and the state of Washington just said, nope, we're not going to farm any more non native species, so it's gone. You will not be able to do that, it's banned. Which I feel it's a little bit knee jerk before understanding, especially for again, to go back to coastal communities that need jobs, I think that argument makes it more difficult, so I think the sustainability argument, there's been some big reports that have been done, particularly in Canada . . . it was a really big comprehensive study about sea lice on out migrating pink salmon and there's real controversy about whether or not the sea lice concentrations in salmon farms has contributed to sea lice in out migrating pink salmon. So that's a difficult thing to find correlation with, but that's been kind of the biggest issue is sea lice, and there haven't been like loads and loads and loads of escapes, but that's another concern, is whether or not farmed salmon could crowd out wild salmon from their habitats. Most of these salmon they can't interbreed, so that's a relatively good thing. I think the sea lice issue is something that's more, that to me is the issue that the salmon farming industry hasn't grappled with well enough. But again, taking it from the economic point of view, why on earth would they want to lose fish, and lose money? And so, you know I can see the argument for people wanting salmon farms out of some of those waters, and you would need to look in more detail but in the Broughton, several farms have already agreed to relocate those because it's an out migration corridor for pink salmon, so there are some changes being made in recognition that this isn't fully compatible with the wild salmon, but that's kind of a long winded answer to say that I think that it can be done sustainably in the broader sense that any ag industry can be done sustainably but I am mixed because again, I see it as a way to have coastal jobs. I think it's a little early in the life span of aquaculture to just dismiss it out of hand. Because I think that there's been a lot of involvement from NGO's really early on and it used to be just like, run 'em out, and it may be in BC that they do get shoved out, or that they're moving them to different styles and types of farming that's more like closed containment so the lice can't really get out you know, and it's not going to interact with the environment as much but yeah, I think there's been a lot of improvements on the sustainability aspect but it's just a difficult question - there's a lot of First Nations groups that feel like some of those salmon farms are in areas that are in sovereign territories, however, there's a lot of First Nations that have struck relationships with these salmon companies and have had those for years and years and years and I don't know the name of the First Nations group in Klemtu but that group there has partnered with one of the companies there as well, so again, it's nuanced, and I always think about that if I see people criticising salmon from a sustainability perspective, there are - I am fully behind people that do that because that helps push forward change - but I also as a contrarian, I like to have the other context of, ok, so what should people do in Klemtu? And you know, is tourism going to be it? There's no more wild salmon to have a viable fishery, so you know, it becomes difficult, not so simple."

Kurt Grinnell Biography:

Former NWA Vice President

Bio from <https://huxley.wvu.edu/speaker-series/grinnell>:

“Kurt Grinnell is a Jamestown S’Klallam Tribal member and has served on the Jamestown Tribal Council since 2004. As the Tribe's Policy Representative for the Natural Resources department, he brings to the Council a unique perspective on natural resource conservation. He represents the natural resource interests of the Tribe as the Vice Chairman of the Point No Point Treaty Council Board and as a Commissioner on the Northwest Indian Fisheries Commission (NWIFC). The NWIFC is a consortium of 20 Western Washington Treaty Tribes that deal with treaty rights issues that the tribes have in common. As the Tribe's representative he participates on the legal technical team at a policy level, on which the Tribe relies to manage its natural resources. He represents the Tribe on all fisheries issues that require policy involvement, co-management discussion, or tribe-to-tribe discussions. He is also the Chairman of our Tribe's Natural Resource Committee.”

Excerpts from Kurt Grinnell’s Interview:

“You know too, when we talk about human health and you know, with the tribes, you know, we are one of the peoples on the planet with the most poor health, you know, with diabetes and all the different social issues that people have, and the tribes are hit hard with that, and as the tribes have gotten further and further away from eating from the sea, which is, you know, we’ve always been a rich people in that we can feed ourselves and sustain ourselves on finfish and shellfish with the occasional elk and deer, but you know, we’ve drifted further and further away from that where you know, you have larger reservations where they might have 80% unemployment and they live a lot on commodities and those commodities are really poor in nutrition. And so, as you get more rural out into our areas, and further out, it’s even more important that we set up some sort of system that we can feed ourselves and make sure to do it properly. And one of the things too that people say is “well farmed fish isn’t good for you,” well I can tell you that we can only eat so much wild fish, as tribal people, we can only eat so much because of the toxins that are in our fish. And so we have our elderly people that still today would eat almost all fish all the time, we can’t let them do that. But if you raise the fish yourselves and you’re feeding them a high quality food with no toxins in it because you are producing the food, then they aren’t eating out of the food chain and they don’t have the toxins that the wild fish will have. Does that mean that we don’t want to eat wild salmon or that we give up on it? Of course not. We’re talking about a parallel track where we will produce fish and shellfish but we also will take care of our habitat. You know, we need to be good stewards for future generations, you’ll hear us say all the time we think seven generations out as tribal people, that means we need to keep this planet intact. And so we have teams and teams, just here at our tribe we have a team of biologists and folks that help manage our resources and then we have a

point management team that does much the same and then we move to the next level, which is the northwest human fish connection, which is where there are twenty of us tribes and we have another team of people doing that for us, and we work together, and not only that we partner with NOAA and the state, you know, we're always working to recover these dwindling stocks that we have in shellfish and it could get back to deer and elk and anything on land too. Water quality . . . you know as hard as we've worked and as much money as we've put into it, you know, we still struggle to make any headway. Not for a lack of trying or lack of will, but we need to get everybody on board for the future. You know, I don't have to go all into that today, it's just too much, but you know, the tribes, we are bringing back the Olympia oyster but it's going to take a long time, but since we've used a non native species for the last 115-20 years, the pacific oyster, and we've been growing those. Sometimes we accept a non native species in the farming community to farm even as tribes. Finfish, people have a little more pushback on that but sometimes in order to move at all forward, we have to make an exception. And this is where we are working really hard . . . there's tribes in washington state that grown steelhead to maturity and they're pretty successful at it, and they're able to provide fish to their tribe as well as you know, able to sell those fish and help sustain their tribal programs . . .

“Just a quick point on Alaska . . . about 75% of the fish they're catching up there is hatchery fish. And so, you look at our last frontier, and even the stocks are dwindling there. And I've got my daughter and son in law up are boat owners up there and they make their living and they're seeing things that they've never seen before, with the fish are coming in long and skinny, or they're not showing up, or they're having record lows that their grandfathers have never seen. And honestly I've had, you know, a discussion with a major company up there and they said, you know, what are we going to do one day, you know, with these dwindling stocks, we may need to look at this too, you know, you have, I think it's 9.7 billion people on the planet by 2030, you look at 2050 and add another couple billion, and one of these days all these Asian countries and others that are shipping to you as their populations expand, will no longer be shipping to you, they'll be consuming it themselves, and honestly, we have to look forward enough to make sure that we're ready for - ten years goes by quick - at least it has in my lifetime, and twenty years too, and so, it's important that this country as a whole looks forward to how we're going to sustain our own people with a good high quality food product.”

“I see that aquaculture - whether it's shellfish or finfish - can be done sustainably using the sciences and best practices. One of the things that we're working on as well as Cooke and others is to grow kelp around fish pens, to use sea cucumbers to eat fish waste, to use technology camera systems so you don't overfeed the fish and that feed is just going to the bottom and laying on the bottom, so you know, the type of food they're consuming is very important too for that different species, so we're always experimenting with this kind of thing. And so I guess, if

you compare the technology even in our lives every day it's much different than it was 30 or 40 years ago, well that's the same in aquaculture too. And right now, the majority of what people are eating, even in shellfish, is farmed. And you know, it's just a matter of time before our children's children need to turn to this. And if we do go land based, Jim had some really good points on the amount of room it takes, and the amount of water and the amount of electricity it would take to be able to do it. And we're not there yet. We're working on it . . . but it takes \$3-400,000 of electricity . . . and so everybody in the industry is working very hard towards that goal, but it's not there yet, and honestly, being able to put these fish in the open environment in the sea there, they're happier there. You know, they're in their natural environment, they're in constant motion, I think Jim's going to correct me there but the fish take up 4 percent of [Jim: at harvest, it's 2 percent of the volume of the pen is taken up by the fish, anywhere from 2-2.5 percent. Most of the time it's below 2 percent. And at stocking it's 1 percent of the cage volume is taken up by fish so there's a real misconception there too that these things are overly crowded and that leads to problems, it really isn't. You know, it doesn't behoove us to stuff these things in because they're living creatures and they can't tolerate it any more than we could, I couldn't live in a condo very long myself . . . and you know, they are raised in low densities in comparison with other animals and you know, when we look at the efficiency of raising fish in water that's really where the advantage comes in relation to other food production systems. It's much more efficient use of space, of resources, you know, we get food conversions of our animals now that are close to one to one, when you look at one of the metrics that was often used was fish in fish out, claiming that there was a lot more fish going in than fish coming out, now with the diets we're getting that close to one to one as well, so technology as Kurt pointed out is changing our business and it's up to us to stay up with it, and convincing our investors to invest in it, but we need to in order to move forward.] . . . But you know if you compare how much water it takes to raise one pound of beef I think it's right around 2000 gallons of water for every one pound of beef, that if then, you know, what we can raise in a football field might take you - I don't know Jim, I'm going to throw this out - how many acreage of cattle does it take to do that same amount, 100,000 acres something like that, because each cow needs so many acres to graze, and so that's why so many third world countries are going to this because it's actually affordable and they can actually make this happen there where they don't have either the land to raise cattle or the money to do it, and honestly they're taking down the rain forest and you can see how that's working for them.”

Jeanne McKnight Biography:

Executive Director of Northwest Aquaculture Alliance

<https://www.nwaquaculturealliance.org/about/>

“Jeanne McKnight has worked all aspects of the global aquaculture industry for more than 25 years—where she has earned a reputation as a strong advocate for the commercial wild harvest sector as well as the responsible fish farming sector worldwide. She is a frequent contributor to trade magazines and has spoken extensively on the benefits of aquaculture at various conferences.”

Excerpts from Jeanne McKnight’s Interview:

“The biggest lie, and I come at this from a communications perspective, when you get to Washington state, I’ve identified three big lies, and that doesn’t mean intentional lies, it could just mean somebody doesn’t understand the science. But the first one is that salmon farming harms wild salmon. That is a myth that I wish people understood better, that wild salmon are affected if the runs are endangered - which they are - but you know we just had a big sewage spill . . . but we have upland development that is harming the native salmon . . . in addition to development we have pollution that comes in various places . . . the wild salmon, the harm, there’s other factors that harm wild salmon and if you really take a look at where the marine aquaculture sites are located that is not the source of harm for the wild salmon” (26)

“My wish list would honestly be something that would get us away from the either/or. What I see in the marketplace, in the seafood trade shows and that sort of thing back in the day, is you know, it’s not either/or. It’s not wild or farmed. It really should be both. As Jim was talking about the USDA now says, for optimum health eat seafood twice a week . . . make that wild and farmed, not wild or farmed. And I would love to see, some of the companies . . . that would like to denigrate farmed salmon to promote their product. I don’t think we need to do that. And as a case in point, one of the global organization, that used to be the Global Aquaculture Alliance, is changing its name to the Global Seafood Alliance, because they find that there is common ground when you’re processing, there’s common ground in labor, there’s common ground in certain standards . . . so my point is that it’s both, it’s eating seafood, that’s the ultimate vision, it’s optimum health. Let’s be a healthy people. And sometimes aquaculture will fill that need, sometimes it will be the wild capture, it shouldn’t be either/or. And I would love to see fishermen afraid of aquaculture really understand it more and embrace it more. The big companies all have, by the way . . . so it shouldn’t be either/or, that’s the last pushback, fishermen shouldn’t be afraid . . . You know, and just to kind of wrap that thought, Alaska is always near and dear to my heart, and some of the big processing centers, processing plants, have had to close, because they have not had the quality of the product coming in. Maybe more in white fish, but still, if in fact Alaska

had not outlawed salmon farming when they did, back in the 80s I think is when they did, they might be one of the world's three largest producers of farmed salmon. But they did, and so, some of their processing plants are lying idle. And Seattle, some of the processing plants are now processing some of Jim's product"

"In talking about what this industry of the future could look like one thing we should all be aware of is this, on a pre competitive level, what's taking place, technology transfer, university transfers . . . community colleges - the industry of the future will continue to be so knowledge based . . . but there is nothing in mind that compares to the vigorous intellectual dialogue that goes on on a pre competitive level, internationally, that benefits the companies whether they're growing algae in Alaska, whether they're growing seaweed in Washington state, whether they're growing Olympia oysters, on a pre competitive level. The industry of the future is going to benefit from all of this, whether it's technology from microsoft, whether it's google mother earth, whether it's sonar - we have a new member of our organization who works with the government on sonar, looking at food waste, looking at animal welfare - Jim you brought that up, we're never going to not see marine aquaculture because right now that is the way to keep animals healthy. I mean we'll see other ways of doing it, but on a massive scale we're always going to have marine aquaculture and from our members perspective, we want a vital, vigorous, multi sectored industry rather than favoring one or the other. But it will be knowledge based. And it will continue to be knowledge based. And it may be that some of Kurt's young leaders in his organization will go study in Norway, I mean, we don't know. But that's what happens, and it happens not at the competitive level where companies are competing against other companies but for the good of the industry. I have never seen anything like it, where people care so much, you know the passion you've seen with us, they care about the industry as a whole that they work together to share knowledge, to share practices, to share standards. So to answer your question about what the future will hold, it will be even more rigorous, it will be even more scientifically based than even it is today."

Alexandra Morton Biography:

<https://www.alexandramorton.ca/about-alex/>

“Alexandra Morton has been called "the Jane Goodall of Canada" because of her passionate thirty-year fight to save British Columbia's wild salmon. Her account of that fight is both inspiring in its own right and a roadmap of resistance.

Alexandra Morton came north from California in the early 1980s, following her first love--the northern resident orca. In remote Echo Bay, in the Broughton Archipelago, she found the perfect place to settle into all she had ever dreamed of: a lifetime of observing and learning what these big-brained mammals are saying to each other. She was lucky enough to get there just in time to witness a place of true natural abundance, and learned how to thrive in the wilderness as a scientist and a single mother.

Then, in 1989, industrial aquaculture moved into the region, chasing the whales away. Her fisherman neighbours asked her if she would write letters on their behalf to government explaining the damage the farms were doing to the fisheries, and one thing led to another. Soon Alex had shifted her scientific focus to documenting the infectious diseases and parasites that pour from the ocean farm pens of Atlantic salmon into the migration routes of wild Pacific salmon, and then to proving their disastrous impact on wild salmon and the entire ecosystem of the coast.

Alex stood against the farms, first representing her community, then alone, and at last as part of an uprising that built around her as ancient Indigenous governance resisted a province and a country that wouldn't obey their own court rulings. She has used her science, many acts of protest and the legal system in her unrelenting efforts to save wild salmon and ultimately the whales — a story that reveals her own doggedness and bravery but also shines a bright light on the ways other humans doggedly resist the truth. Here, she brilliantly calls those humans to account for the sake of us all.”

Excerpts from Alex Morton’s Interview:

Q: How can we support both wild salmon and farmed salmon, what do we need to do to get there?

“It’s twofold. One for the farms, and one for the wild. So the farmed industry has to get itself into closed containment, because they break the natural laws, causing amplification of all these different pathogens, whether it’s parasites, bacteria, or viruses. And they not only amplify them but they change them. So for example, the strategy for a virus in the farm . . . the way they react to the farmed environment is different to the wild environment, because in the wild it benefits a virus to you know, live lightly on your host, and go for a long time, but in a farm, where everything is going to die in 18 months maximum, the strategy is to hit hard, increase virulence,

replicate as fast as you can during the opportunity that you have. So there is no fixing that. I mean, I've been through this with the industry, with government, with other scientists, there is no way to fix it because the pathogens get into the farm and the predators cannot follow them in and so in the wild, sick fish are just taken out of the system, but in the farm, they wither away and they're contagious. So, they have to get into closed containment. And I feel that the government has done a huge disservice to the industry in British Columbia by coddling it. By letting it get away with things, instead of a hard line. If they'd taken a hard line, we'd be past this point, and I believe we'd be leaders in a flourishing closed containment industry. When you look at the investment that is going on world wide, you know thanks to Intrafish which I look at every morning, it's such a good source of information, I can see it's not environmentalists doing closed containment, it's businessmen. For the wild fish, oh my gosh, there is this incredible science being developed in DFO by Dr. Christie Miller, and essentially what she can do is read the immune system of the fish, it's called genomic profiling. And when you look at the immune system with the tools that she has what you can see is what proteins have been up regulated, in other words, what tools has this immune system picked up to combat whatever the fish is facing, whether it's high water temperature, pathogens, predation stress, low oxygen, each of these has a signature and so by reading this it's a lot like plugging your readers into the car and you can see, oh, I've got this problem. Just, it lays it out. You don't have to take the fish apart, check all the organs, I mean you can do all that later, but the immune system is producing data that if you can interpret it, you can get a running story of what these fish are doing. So if you want to restore wild salmon, you would start sampling them at their spawning grounds, and then at intervals as they migrate down the river, and then along the coast and read how their immune system's changing as they move, and when you find where the problem is, where they're just lighting up, combatting maybe multiple stressors, and go into that area and ask what is going on here that is causing this in the immune system, oh, it's this pipe, that is releasing this you know, chemical, or it's salmon farms, or it's high water temperature in a river, well then you can try to solve that problem on a human level, so, filter a pipe, release more water from a dam, move that farm off the migration route, and the power of the system is so that you can read that immune system of the fish so that next time they go through there, and now you are truly into adaptive management because you can tell, did we make it better? Is that stress response gone, or is it weakened, or is it unchanged, or is it worse? So if you did these two things - you started building land based aquaculture, which the Canadian government and the provincial government I believe are more than ready to assist in that. And you were to pick up this scientific tool and you were to pull together all the people that are on the coast who are doing the research, so that includes the First Nations fisheries groups, universities, and you've got your stream keepers, your hatchery workers, if you united all of these people as a team that sampled the fish of the environment in exactly the same way, and you pass that data through the genomic lab and on to mathematical modelers, well, now you can get the pulse of the thing. Like why are runs flashing off and on? We don't need to wonder, we just ask the fish. And then we change our behavior. And I feel this has to work. I mean, once you start listening to the fish itself - they are the ultimate authority -

they don't have any politics, you know, they don't know that this is an inappropriate thing to say, their immune systems are going to tell you."

Jim Parsons Biography:

NWAA President

<https://www.nwaquaculturealliance.org/about/> General Manager, Cooke Aquaculture Pacific, LLC

“Cooke Aquaculture Inc. is a family-owned, vertically integrated aquaculture corporation based in Blacks Harbour, New Brunswick, Canada. A pioneer in salmon farming, Cooke today has farming operations in Atlantic Canada, the United States (Maine and Washington State), Chile, Scotland, Central America (shrimp) and Spain (sea bass and sea bream).

The oldest continuously operating salmon farming company in North America, Cooke Aquaculture operates farms close to Cypress Island, Hope Island, Port Angeles, and Rich Passage—farms that have been in operation for more than 30 years. Cooke ranks among the global leaders in third-party certifications and traceability programs, with the distinction of holding Best Aquaculture Practices (BAP) for all of its farming operations. Cooke Aquaculture Pacific employs 60 people in Washington State.”

Excerpts from Jim Parson’s Interview:

“We’re being encouraged by numerous entities, whether they’re the government or nutritionists, to eat more seafood. Currently we’ve been stuck at the same per capita consumption of seafood in this country, 15-17 pounds per person per year . . . and it’s been proven it can save lives, it’s been proven that we need it for a healthy diet, that said, this country imports 80-90% percent of the seafood that we consume. If anything this pandemic has taught us is that we can’t necessarily rely on foreign sources for our food supply and perhaps we shouldn’t be so dependent on them. Of that imported product, now we’re approaching 50% of that, at least half of that is being grown elsewhere, is aquaculture product that’s coming from countries that honestly in many cases, not in all cases certainly but in many cases, is far less regulated than our United States industry is. So the quality, or the history of that product isn’t well known. I really think we need to get past this. We don’t question our farms that much, we don’t question many of the products in our supply chain for our food, and we really need to look at seafood in a bigger light I think, that’s one of the main misconceptions that I see out there that I’d like people to understand better.

Unfortunately what happens is you start saying “oh yeah, these guys don’t grow it right, or these fish aren’t good, then there’s so many choices in the food chain out there that people are likely to say Oh gosh was it that salmon that was bad or was it that catfish that was bad? I think I’ll just buy some chicken” you know, and we don’t want that for this country, we want people to be able to eat healthy seafood.

“In my mind, what I’d like to see and what I believe will happen, if we are to retain our somewhat of a seafood independence in this country, or get more in that direction, we need to begin to embrace the farming of fish in our waters. You know that doesn’t mean that there’s a cage every half a mile or anything, there are other options. Offshore, while a little more challenging on this coast is being done elsewhere in the world quite successfully. The whole land based industry, that’s another misconception is that you could raise all of these fish on land and meet the needs. We have a state of the art land based recirculating aquaculture facility that we utilize that’s actually not too far from south of Olympia from where I started my work in this industry and it can produce 90 tonnes of fish out of that particular facility but if that was done to market size it would be considerably less numbers of fish that people could utilize, the fish currently spend half of their life in that particular system. If we were to expand that to take it all the way to market size, we would need to probably cover the space that’s utilized by at least ten fold so instead of being two football fields it would be twenty football fields. Even though we’re reusing the water at 95-98% when we have it ratcheted down, we would still probably deplete the entire Scatter Creek aquifer dry if we were to remove that much water. And the energy usage is huge. So we need to find ways to be more efficient in our land based production to meet some of those problems. We need to find ways to more effectively and with lower impacts raise the fish in open water systems and I think it’s going to take all of that in order to meet the needs of our seafood demand that is coming up in the next twenty years.”