

## TRANSCRIPT

It's Debatable! radio call-in show talks with Alanna Goddard, a representative of the aquaculture industry ABSea Fisheries in New Brunswick, and Cole Diamond, a representative of an environmental foundation Sea to Sea Foundation in British Columbia.

Subject:

The representatives will debate the pros and cons of aquaculture—fish farming in Canada.

HOST: Good morning, Canada. I'm your host, Craig Dawson, and this is IT'S

DEBATABLE, the radio show where we kick around controversial ideas. Today, we'll be discussing another hot topic that's on the minds of people across our vast country!

And if it's not on their minds, well, it will be by the end of our show.

But first, the results of yesterday's vote... Now the topic was lowering the voting age to 16. You voted 51 percent in favour, 49 percent against. It was a close one! Thanks, listeners, for calling in to vote.

Now, it strikes me that this morning our debate might seem... well, a little fishy. We'll be having a close look at the pros and cons of aquaculture—fish farming. Did you know that many fish that come to Canadian tables aren't caught "in the wild" but are actually raised? Sounds like a good idea, perhaps—simple and harmless. But is it? What are the consequences for the environment? What are the consequences for the consumer? Lately, people have been asking a whole lot of questions about the fish-farming industry. To help us identify and sort out the issues related to this slippery topic, I have with me Alanna Goddard—a representative of the aquaculture industry from ABSea Fisheries in New

Brunswick; and Cole Diamond, from the Sea to Sea Foundation in British Columbia—an organization that monitors the health of the seas touching Canadians shores.

Alanna, Cole, thanks for joining me today.

ALANNA: It's nice to be here, Craig. Thanks for having me.

COLE: Yes, it's a pleasure, Craig.

HOST: Alanna flew in from New Brunswick to our studio here in Toronto. Cole is joining us from his office in Victoria. So, Cole, let's begin by asking you to define "aquaculture" for those of us who are not too familiar with the word.

COLE: Certainly. You called it "fish farming" a minute ago and it's very close to farming, or agriculture. *Agriculture* is farming the earth or land; aquaculture is farming the waters. The word "aqua" is from Latin and means "water." So "aquaculture" is the practice of raising or cultivating marine or freshwater fish or shellfish for food.

HOST: I see. And what are some examples of foods from aquaculture? Alanna?

ALANNA: Uh, there are so many.... In Canada, the main saltwater fish are Atlantic salmon and Pacific salmon. The freshwater species most commonly raised are rainbow trout and Arctic char. As for shellfish, the most common are blue mussels, Pacific

oysters, and American oysters. And last of all, some aquaculturalists cultivate seaweed, and there are plans to grow algae, as well.

HOST: Well, the issue we are debating is “Should we continue with fish farming in Canada?” I’d like to start with each of you stating your position and explaining to our listeners the key reasons for your particular view. Alanna, you’re up first!

ALANNA: Certainly, Craig. I’ve prepared a little something. Aquaculture should definitely be continued in Canada and will benefit *all* Canadians. In Canada, we “grow” animals, such as cows and pigs, which we then consume for food. Aquaculture does the same with fish and shellfish. Instead of catching them wild and then processing and consuming them, we “grow” them for food, which benefits people and *even* fish. For example, when traditional fishing operations are used to catch wild bigeye tuna, they sometimes use long lines that have a thousand hooks on them. This fishing method ends up killing many, many nearby fish of other species, which are then discarded. When fish are farmed, however, no fish goes to waste. Also, aquaculture benefits Canadians, as well as people in other countries: it can provide a reliable source of food for many people. It can create many jobs in a community, and it can encourage local investment. It can increase revenues at the municipal, provincial, and national levels....

COLE: Ka-ching, ka-ching. Money, money, money. Craig, I’ve got like to jump in here and mention to our listeners that, despite what the famous song lyrics say, money does

NOT make the world go around. Our Earth depends on a natural balance between the wild and the tame, and aquaculture threatens that balance.

HOST: Okay, Cole. Let's just ask Alanna if she's finished giving her introduction and at least a few key reasons. She's shrugging, nodding "yes"... Thanks Alanna. So, Cole, carry on. Why don't you tell our listeners where you stand and a few key reasons?

COLE: Well, I'm obviously opposed to fish farming continuing as it is in Canada. It's hard to narrow down the reasons, but I guess I'd say the biggie is that, basically, aquaculture is dangerous to our environment. How? There are a lot of ways, but first think about how fish farms feed their fish. Many of the fish that are being raised are fed pellets. The pellets are made of fish food, sure, but also chemicals, such as antibiotics, pesticides, and fungicides. That's because farmed fish get sick easily, and the chemicals are supposed to keep them healthy. That *sounds* good, but what actually happens is that usually the farmed fish don't eat all the pellets. If the fish are being raised in open nets, the leftover pellets can drop through the bottom of the nets and sink to the bottom of the ocean or lake. And, in fact, so does the waste from the fish, which means residue from the chemicals and excess nutrients sinks also. The leftover pellets and the fish waste drop through the nets and into the water systems—*our* oceans and lakes—and can take months to decompose. They can build up in the sand and mud of the lake or sea floor and pollute the area....

HOST: Well, forgive me, Cole, but... isn't it natural for fish to... "poop" in the sea?

COLE: Well, yes, of course it is, and many people assume that if “poop” in the water is okay from wild fish, it’s okay from farmed fish. But here’s the difference: normally, fish—wild fish—don’t stay in one place. When fish live wild their “poop” spreads throughout the water systems. But think of a fish tank at home: you can see the fish “poop” build up when fish stay in one place. With fish farms, the “poop” builds up also, but we just can’t see it. The facts speak for themselves: in some Canadian salmon farms, there can be 180 000 to 250 000 fish at one site! You can imagine how much waste that creates in one place. As the fish waste builds up, little creatures come and feed on the waste below the net, but over time, there is less and less diversity at these sites, and soon there are only worms, bacteria, and fungi living there. Also, the waste is contaminated with chemical residue. Sometimes it drifts to beaches. The beaches become toxic, and other marine life feeds on it, and the damage spreads....

HOST: Okay, so I must interrupt here, Cole. I think that gives you and Alanna equal time.

COLE: Sure, Craig, but let me just make one more point. I’ve already talked about farmed fish getting sick easily and about some damage caused by farmed fish staying in one place, but what about when they get loose? Sometimes nets rip or tear at these fish farms, so farmed fish escape into the wild populations. Escaped farmed fish can spread serious diseases and parasites into the natural stock. These can devastate the wild populations!

HOST: Okay, Cole. Now I really think you've both had time to present your sides of the debate—or at least your positions and *some* of your reasons. I'm going to open up the phone lines to take calls from our listeners across Canada. Let's hear what they think about the subject of aquaculture. And, Cole and Alanna, you'll be able to add some comments after the calls.

[BREAK]

HOST: First, we are fortunate to have a call from an honest-to-goodness fish farmer from the East Coast of Canada, Vince Foraine. Are you there, Mr. Foraine?

VINCE: Yes. Hullo, Craig.

HOST: Welcome, Vince. I'm hoping you can tell us a little bit about what you do as a fish farmer; something about your own operation, Vince.

VINCE: Sure, Craig. My father started up fish farming when he had to stop fishing offshore from Nova Scotia about 10 years ago. When he lost the fleet it was a hard time. See, fishing is in our blood, but there just weren't enough fish anymore. Dad wanted to make a living connected to the sea and the fishing industry in some way, so he thought about aquaculture. He did some research, he got a loan, bought some equipment, and began his new business. He even talked me into joining him.

HOST: So, how do you raise the fish?

VINCE: Well, we use net cages in open-water coastal sites. These are very large nets, which we suspend in the water and surround with decks and walkways so that we can move around them and between them. We need to be able to feed the fish and monitor them. And, sure, there are probably some environmental effects, like with almost every industry. But we follow the regulations, and our site is inspected, so I feel okay about it all. And our family didn't have to move away to look for work. Dad was able to stay put. Now I can too, and we've even hired people in our community to give us a hand.

HOST: Well, thanks for calling in, Vince. That was Vince Foraine, from Nova Scotia. And now—

COLE: Sorry, Craig, but I'd like to raise another point here—something our audience may not have considered—

ALANNA: Vince's example is a very convincing argument for aquaculture in Canada! You heard Vince say that his father lost his fishing fleet and his family might have had to move out of their community. Would you want fishing folk unemployed and going hungry—and other people going hungry, too? This could happen, Cole, if we start refusing people new ways to fish and make a living. The Foraine aquaculture operation helps a family survive and stay in their home, in their community. And it benefits others

in the community as well. So it puts money in the Foraines' pockets and feeds a lot of Canadians, too!

COLE: Alanna, I *would* like a chance to speak. I agree that, yes, clearly Vince's dad has found an economic alternative after losing his offshore livelihood. No one wants a family to go hungry or to have to move because of job loss. But I wanted to explain that it is important to know what *kind* of fish Vince's family is farming, as well. We haven't talked about this yet, but not all farmed fish have the same environmental impacts and it's wishful thinking to believe that every way of practising aquaculture is equal or positive. See, Vince's family likely farms a type of carnivorous fish, such as salmon, and these fish are being fed... well, basically, they are being fed other fish! The fish food pellets are loaded up with the chemicals that I mentioned earlier *and* highly nutritious wild fish, such as mackerel, sardines, and herring. Again, let's look at facts, Alanna: it takes two to five kilograms of these wild fish to "grow" one kilogram of salmon. That puts a lot of pressure on the stocks of these wild fish. We are fishing out our seas! What happens when these wild stocks run low? We'll all be in very serious, serious trouble. So what do we do now? Keep feeding wild fish stocks to farmed salmon, to feed rich people eating in select homes and restaurants in very few places on the planet? Or stop feeding wild stocks to these pricey farmed fish so that wild stocks can continue to be available to more people everywhere—rich, poor, and in-between?

ALANNA: Cole makes a good point about different species. Those of us who support aquaculture are not blind to the impact farming certain species can have on the



environment. Everyone—both those in favour of and those against aquaculture—recognizes that the fish farmers are raising fish that they know they can sell to restaurants and other high-paying customers. And the restaurants want to serve the fish that they *know* their customers will pay to eat. Well, unfortunately right now, people around the world who eat at restaurants want to eat foods such as sushi and carnivorous species.

COLE: ... such as salmon, tuna, and shrimp.

HOST: Shrimp? Those little guys are carnivorous?

ALANNA: Yes, that's correct. Shrimp *are* actually carnivorous. So, getting back to my point, Craig, a real danger of using fish food pellets in aquaculture is that it can deplete an essential food source for many other species in the sea. But critics need to know that there *is* a solution to this. Right now, people who eat fish raised from aquaculture are eating from a limited menu. In Canada, the menu is mainly Atlantic salmon, Pacific salmon, rainbow and steelhead trout, tilapia, and Arctic char, as well as mussels, oysters, clams, and scallops. We have to persuade the consumer, here in Canada and abroad, to eat a bigger variety of fish and ones that are lower on the food chain—not just the carnivores. If fish farmers saw the demand, they would begin to grow and raise these lower-impact species.

HOST: Actually, I think our next caller, has something to say on the topic, as well.

Welcome, Jai Sien.

JAI: Hello, Craig. I work for the Canadian government, Craig, and we have been studying how aquaculture uses food pellets—or “aqua pellets.” The problem is that the industry has used the lower-grade fish as “trash fish” in these pellets for the higher-grade fish to eat. However, we are happy to report that fisheries are reducing the fishmeal and oil content in the aqua pellets.

HOST: How are they doing that?

JAI: They are replacing it with vegetable proteins and oils. This reduces the impact on the stocks of lower-grade fish but also helps reduce the accumulation of PCBs in farmed, higher-grade fish.

HOST: I’m not sure what that means, Mr. Sien.

JAI: PCBs are pollutants. They build up in animal tissue. Farmed salmon have higher levels of PCBs than wild salmon because the farmed fish are fed aqua pellets made up of ground-up smaller fish and high levels of fish oil, to fatten them. PCBs tend to concentrate in fats. When humans are exposed to high levels of PCBs, they face many health problems ranging from skin problems to even (according to some studies) liver problems and some kinds of cancer. So the change to more vegetable content in food pellets is indeed a good thing.

COLE: This is true, Craig. Lowering the fish content in fish pellets is certainly a good thing. But let's look at that fact *in the context* of other facts. Studies also show that, although the amount of fish needed to raise one salmon was reduced by 25 percent between 1997 and 2001, the overall aquaculture industry has grown by 60 percent during the same years. In other words, the numbers look better per fish, but unfortunately there are more fish being farmed and so overall more fish being caught to make fish pellets, more "poop" releasing more chemicals into our oceans, and more danger overall to the ocean environment and the wild fish stock. Call it "trash fish"... rich menus are trashing our oceans!

HOST: Well... thank you, Cole.

[BREAK]

HOST: Okay, let me "wade in" here again. Listeners, I told you it was a hot topic! We've hooked someone else on the line! Am I speaking with Sujata Perlmutter, from Edmonton?

SUJATA: Yes, Craig, that's me.

HOST: Thanks for calling, Ms. Perlmutter. What would you like to say to our guests and listeners about aquaculture?

SUJATA: Well, I actually consider myself an environmentalist, and I'm very interested in your discussion about fish farming. I care about preserving all our animal, bird, and fish species. My view is that aquaculture may benefit some fish species. If a fish species can be raised on fish farms rather than fished from our oceans, it may reduce the fishing pressure on certain wild populations. It may help conserve those species. So... that's all then.

HOST: I see, Ms. Perlmutter. And— Oh! I guess Ms. Perlmutter said all she wanted to!

ALANNA: Ms. Perlmutter makes a very good point. Not only can aquaculture help us conserve some fish species, but it can also have other environmental benefits. For example, mollusks and seaweeds are farmed in coastal waters. As more and more people begin appreciating the value of these foods and the farms increase in size, Canadians will value our coastal waters more. They will see that our coastal waters need to be protected from pollution. It will be easier to pass laws—

COLE: That's pretty ironic, Alanna. On the one hand, you say you support protecting our coasts from pollution, but on the other hand, you support open-net farming, which, as we've discussed, actually adds pollutants in those very waters. You're being extremely hypocritical! In fact, I think you're trying to play games with our audience, but I think they are smart enough to see through your smoke.

ALANNA: Come on, Cole... I respect our audience *and* you—even if I don't always agree with your point of view. I support aquaculture, period. Here are the facts and here is my opinion: aquaculture in our coastal waters will grow much-needed food and bring public attention to the importance of these environments, which will mean even better regulation and practices. Let's look at the past and the future: aquaculture has been practised for centuries and it is clearly becoming a more and more important way to meet our future food needs in Canada and around the world. And you can go on and on about open-net aquaculture and how harmful it is, but you know the facts as well as I do—about 85 percent of aquaculture production around the world uses land-based ponds and produces non-carnivorous fish species. These ponds are very “eco-friendly.” For example, with these aquaculture operations, fish wastes don't become pollutants—they become fertilizers.

HOST: Hey, now, we haven't heard about this yet. Sorry, but could one of you explain “land-based ponds?”

ALANNA: Sure. Remember that the caller, Vince Foraine, described *open-net* fish farms—large net cages *in open-water coastal sites* surrounded by decks and walkways. In contrast, many land-based fish farms use *closed* containers, such as ponds and tanks. In fact, some tanks are heated so the farms can raise marine fish that need warmer temperatures. When the fish can't escape, there's no risk of farmed fish infecting wild fish or breeding with them.

COLE: Not so fast, Alanna... Let's look at the facts—including details of certain methods and the industry. At Sea to Sea, my colleagues and I admit some land-based aquaculture is okay—and experts from around the world agree. But we also know that open-net fishing is damaging, so we believe *that* practice has to stop, or be better controlled. Fish farmers could change to containment fishing, for example, in our oceans. Craig, that's a method that contains the water, fish waste, and food. It's expensive, sure, but it is relatively clean. And in general, stopping or controlling open-net fishing won't hurt the small operation fish farmers. It's mainly big multinationals that open-net fish. They take advantage of the public waters as sites for their industries—and leave the waters polluted. We must move from open-net-cage fishing to fully enclosed systems that safely trap wastes.

HOST: Okay. We have Len Goldstein. Len, you're on IT'S DEBATABLE. What's on your mind?

LEN: Hello?

HOST: Hello, Mr. Goldstein. Thanks for calling in. What would you like to say about aquaculture? What's your point of view—for or against?

LEN: Well, I live near Lake Winnipeg. We have several fish farms in Manitoba, and I think it is important that we keep them active. Aquaculture began here over 40 years ago. We don't do lots of it, but we're proud of it. Why? Everyone knows that the population

of the world is growing. The planet isn't getting any bigger, but there are more and more mouths to feed. I believe that aquaculture can help feed our exploding world population. And you know, right now, almost half the fish consumed world-wide have been raised on a fish farm. So imagine if we could raise fish more easily. And in those countries where people don't have as many natural resources as we do in Canada, it would be terrific.

HOST: Why, thank you. Okay, there's our music, which is telling me we have only a few minutes left on the show. Alanna, Cole, before you sign off, just give me a closing statement—in 20 seconds or less. How about it: "Should we continue to fish farm in Canada?" Cole first...

COLE: We should continue *only* if we can continue with caution. We can't just say "yes" to *all* aquaculture, no matter how many jobs an operation may make or keep, what it pumps into the economy, or the food it creates in the short term. We need to look at the *details* of specific practices and environments and species; ask hard questions to determine which practices are damaging, such as open-net fish farming, versus relatively safe, such as containment fishing and land-based ponds. Then, we need to consider all possible implications (from fish "poop" and toxic beaches to wild stocks and who gets to eat what menu). We need to look at the *long term* and make our seas, our Earth, and our sustainable future, including jobs, the economy, and food, the highest priority.

ALANNA: Craig, yes, of course we should continue to fish farm in Canada. From every angle—jobs, food, the environment, the economy, Canadian and world needs—it's

common sense. As our economy falters, and as our food sources worldwide are depleted, we have to bump up our production of alternative food products, such as fish. And in Canada, where we are blessed with the longest coastline in the world and nine percent of the world's renewable water supply, we can do it. We have to. Our lives may depend on it. And I think Cole actually agrees with me on this.

HOST: Okay. Thank you both.

ALANNA: Thanks for having me, Craig.

COLE: Thanks, Craig.

HOST: And now, listeners, don't forget to call in to register your vote at 555-323-3333. When you hear the prompt, either press one if you are in favour of continuing fish farming in Canada or two if you are against it. And then tune in again tomorrow to hear the vote results, and to listen to our next debate. Tomorrow, we ask whether or not students learn more when they are given more homework.

I'm Craig Dawson, and this was another installment of IT'S DEBATABLE. Good morning, folks.

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