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Chair

Mr. Rodney Weston

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● (1535)

[*English*]

The Chair (Mr. Rodney Weston (Saint John, CPC)): I call this meeting to order.

I'd like to take a moment to thank our guests for joining us here this afternoon. We really do appreciate you taking time from your busy schedules to appear before the committee and answer some of the questions the committee members have.

I'm not sure how much the clerk has briefed you on the proceedings of the committee, but there are certain time constraints that we try to conform to. Committee members have allotted previously agreed to times in the interest of ensuring that all committee members get to ask questions and have the answers provided to them as well. If you see me interrupting, please don't take offence. It's just in the interest of fairness, and I certainly hope that you will not take offence to that at all.

At this time, I'd like to invite Ms. Milewski to make opening comments, and I believe, Mr. Abbott, you're going to make some comments following Ms. Milewski as well.

Thank you. Please proceed.

Ms. Inka Milewski (Science Advisor, Conservation Council of New Brunswick Inc.): Thank you, Mr. Chairman. I'd like to thank the committee for inviting me here today to give this presentation.

My name is Inka Milewski. I'm a marine biologist, and I'm the science advisor for the Conservation Council of New Brunswick. I've been working in the field doing research for the last 34 years.

The Conservation Council of New Brunswick is one of the oldest environmental citizen-based conservation organizations in Canada. It was founded in 1969 with a mandate to promote policies that would respect the environment and ensure sustainable use of its resources. We act on this mandate through public education, research, policy development, and special programming.

I'm here today to make the environmental and regulatory case for transitioning the open-net pen fish farming industry to closed containment aquaculture. Closed containment aquaculture will address the most serious environmental issues associated with this industry: the loss of habitat and the displacement of traditional fisheries. These are issues that have not been addressed and that cannot be fixed by the current management and regulatory regime. Moving open-net pen salmon farms onto land will also relieve DFO of its conflicting regulatory responsibilities—on the one hand its mandate to protect coastal habitat and wild fish, and on the other hand its mandate to promote and regulate an industry that is known to impact the very habitat and fish it is required to protect.

By volume, fish feces and uneaten feed are the major wastes released from open-net pen farms. This waste is largely invisible to you and me, to the public, and to regulators. DFO has acknowledged that open-net pen farms discharge organic waste, and this waste can have both a small and a large ecological footprint.

In 2005 DFO scientists reported that on a daily basis, salmon farms in one particular bay in southwest New Brunswick released three times more waste—organic waste—than did the sewage plant and the pulp mill that operate in the same bay. The author of that study, the DFO scientist, concluded, and I'm quoting:

> ...substantial changes to the functioning of the ecosystem have occurred due to the presence of the salmon farms.

According to DFO's website, and I'm quoting again:

> Aquaculture operators must meet rigorous federal and provincial environmental standards.
>
> Once an aquaculture facility is up and running, it is regularly monitored for compliance and must strictly adhere to provincial and federal statutes and regulations.

Federal and provincial regulators have agreed that there is only one measure of environmental quality that will be monitored, and that's sulphide levels in the sediments under the farms. DFO has not defined the sulphide limit that results in mandatory regulatory action. An authorization under subsection 35(1) of the federal Fisheries Act, which is this HADD authorization, may be required when sulphide levels exceed 4,500 micromolars.

Options for avoiding this authorization include moving the fish from the farms to another location, reducing the number of fish, or fallowing the site, meaning removing the fish for a period of time and then bringing the fish back in. DFO has determined that sulphide levels over 3,000 result in a 70% to 90% loss of the biological diversity around those farms. At levels over 6,000, ninety percent of the biodiversity is lost.

Annual monitoring in New Brunswick shows that 20% of salmon farms exceed the 1,500 level. This is the level where 40% to 60% of the biodiversity is lost.

For example, here are some monitoring results from a fish farm in Passamaquoddy Bay in southwestern New Brunswick. You'll note that in 2007, the sulphide levels exceeded 9,000. Fish were removed from the site for a couple of years, but once the site went back into production, the sulphide levels shot back to over 7,000. No sanctions were issued against this farm. This farm still operates.

DFO provincial managers and the aquaculture industry believe that simply fallowing—meaning removing the fish for a while—for as little as two months to two years will allow the sediments to recover. Indeed, as you can see, the sulfide levels do drop, but DFO has yet to prove their assumption that the biological community in those sediments around the fish farm recover after the fallowing process.

In 2002 I conducted a study to test the assumption that fallowing indeed results in a recovery of the sediments. This Penn Island farm in Crow Harbour had been in operation for only 18 months, which is one production cycle. After the last fish was harvested and the nets were removed in August 2002, I began sampling the bottom around the fish farm and a nearby control site. I resampled the site in 2003 and again in 2004. Yes, the sulfide levels did recover, but after two years of sampling, the salmon farm sites still had 35% fewer species than my control site.

I'm currently conducting a study in Shelburne Harbour in southwest Nova Scotia to examine the status and the recovery of the habitat around a recently vacated salmon farm. Now, the history of this farm is that it began operating in 1991, expanded in 1995, and transferred ownership in 2006. In 2009 production was suspended, and it resumed operation in 2010. It was vacated in September of this year, and I began sampling in October.

The monitoring history of this site shows that in 2007 and 2008 the sulfide levels actually exceeded the DFO level that may require a subsection 35(1) authorization. None was issued. The site was fallowed for a year. Again, the sulfide levels dropped below 1,500, predictably, but within a year of the farm's returning to production, the sulfide levels were back up to 3,000. This site has been vacated. It's been moved 100 metres north, and it's a farm that will produce three times more salmon than it has currently been producing.

I'll move to the next slide. My preliminary analysis indicates not only differences in the environmental quality of the sediments between the reference and the farm sites, but also differences in species abundance. The picture on the left is a control site, a reference site. The sediment is a light brown mud. The holes you see are likely burrows of various worms, sea cucumbers, crustacean clams. This is all food for groundfish, lobster, and other commercial as well as non-commercial species. We counted 16 different species in this control site.

The picture on the right depicts the sea bottom near and under the fish farm. The sediment is black. It's covered in extensive patches of white bacterial mats, which are typical of heavily polluted benthic environments. In it we counted only seven species.

The farm site samples on the right were dominated by two species. They're called threadworms. In a sample the size of, say, a margarine container, we found over 500 worms. This is not food for lobsters and it's not food for groundfish. These worms are indicative of highly polluted environments. Despite claims made about how rigorously aquaculture operations are monitored and managed, there are in fact no federal or provincial regulations to prevent the release of organic and nutrient waste from fish farms. The evidence shows, and I think I've shown it here, that open-net pen farms continue to operate, even though environmental standards are exceeded and the mitigation measures, that is, fallowing, allowing the farm to recover, are insufficient and incomplete to restore habitat function and health.

The federal and provincial environmental assessment process that is supposed to identify sensitive fish habitat and prevent farms from occupying the space of traditional fisheries has also been a failure. A 2011 study by a University of New Brunswick researcher has documented fishermen's observations around the environmental changes that occur around their fishing grounds.

● (1540)

Within two years of a salmon farm beginning to operate, fishermen report that female lobsters carrying eggs abandon the area. Scallop and sea urchin shells become brittle. Scallop meat and sea urchin roe become discoloured. And herring no longer frequent those waters.

Transitioning open net-pen farms to closed containment systems will solve the problem of habitat loss and degradation by fish farms. And it will address the concerns of traditional fishermen about the loss and the impact its having on their fisheries.

Last, by its own admission, DFO has acknowledged that it has not done a good job of protecting our oceans and our living resources. Its 2010 report, the marine status and trends report, painted a grim picture of the health of our oceans and acknowledged that “[i]ndustry and development have, or are threatening to, impact most ecosystems”. In particular, they single out the coastal zone, where both the aquaculture industry and traditional fishermen compete for space.

Moving aquaculture out of coastal waters will relieve DFO of its conflicting regulatory responsibility so that it can focus on its principal mandate, which is ocean protection, restoration, and conservation.

Thank you.

● (1545)

The Chair: Thank you, Ms. Milewski.

Mr. Abbott.

Mr. Matthew Abbott (Fundy Baykeeper, Conservation Council of New Brunswick Inc.): I'd like to thank the chair and members of the committee for inviting me here to testify before you.

My name is Matthew Abbott, and I'm the Fundy Baykeeper based in St. Andrews, New Brunswick.

Fundy Baykeeper is a member of the over 200-member strong Waterkeeper Alliance, headed up by Robert Kennedy, Jr. It's an international alliance.

Fundy Baykeeper maintains an on-the-water watchdog presence in the outer Bay of Fundy.

In late 2010, Baykeeper spearheaded the formation of the Atlantic Coalition for Aquaculture Reform, a coalition of fisheries associations, conservation groups, and community groups in Atlantic Canada that are concerned about the impact of open-net pen salmon aquaculture and that are committed to protecting our coastal ecosystems.

I think you've already heard from another coalition member, the Atlantic Salmon Federation.

The problems associated with salmon aquaculture are entirely predictable and are inherent to open-net pen technology. Baykeepers have long advocated for a transition to closed containment, for reasons I'll elaborate on. Removing farms from the ocean is the only way to address the impacts of open-net pen farms.

In the interest of clarity, I'll focus on one single concern. I'm here to speak with you about the environmental impact of pesticide treatments for recurring parasite infestations in open-net pen salmon farms.

Sea lice, small crustaceans, are naturally occurring parasites on salmon and other fish. Indeed, salmon anglers sometimes consider a small number of sea lice an indication that the fish they have caught is fresh from the ocean. However, sea lice proliferate in salmon farms due to the high density of fish held together for their entire life cycles.

The salmon aquaculture industry has resorted to pesticide use to control these sea lice infestations. Pesticides designed to kill sea lice are generally also toxic to other crustaceans, including lobster, shrimp, crab, krill, and the numerous other small crustaceans that make up the zooplankton community. Indeed, in many dynamic marine ecosystems, such as the outer Bay of Fundy, these small crustaceans form the base of the food chain.

It's worth pointing out that lobster is Atlantic Canada's most valuable seafood product.

The trajectory of sea lice infestations and pesticide use has followed a similar pattern globally. I'll talk about our experience in New Brunswick, though keep in mind that the same problems have occurred in other salmon farming regions.

As you're no doubt aware, the use of eco-toxic pesticides in the salmon aquaculture industry has been controversial globally, and has been particularly so in New Brunswick recently, since there were a number of lobster kills near salmon sites in 2009. Cypermethrin, a pesticide not approved for marine use in Canada, was found on these dead and dying lobsters. A major New Brunswick aquaculture company and three of its executives were charged by Environment Canada earlier this month in relation to illegal pesticide use in this case. The alleged use of illegal pesticides by some aquaculture industry operators serves to highlight the extent of the problem in southwest New Brunswick.

To give a sense of the scale of the problem, a New Brunswick industry representative told *La Presse*, a Montreal newspaper, that in 2010 they were facing infestation levels of 200 lice per fish. This is quite a remarkable number, as I'm sure you'll note.

The most common pesticide treatment used has been Slice, an in-feed treatment, meaning that the pesticide is incorporated into the salmon feed. Slice, when consumed, kills sea lice attached to the treated salmon. Slice from uneaten feed and feces has been detected in sediments under and around treated farms and has been shown to cause harm to non-target organisms. However, given that Slice has been the drug of choice for over a decade, it is unsurprising that sea lice on New Brunswick farms have been showing resistance to it, meaning that it's lost its effectiveness in killing sea lice. This has led to the increasing use of bath treatments: a liquid pesticide is added to the water containing the salmon and sea lice and is then released into the open marine environment.

● (1550)

The aquaculture industry continues to lobby all levels of government to make more pesticides available for their industry's use. While there are some non-pesticide control mechanisms being investigated, it's accepted that pesticides will continue to be used to kill sea lice in open-net pens. The problems with illegal and thus totally uncontrolled use of pesticides are obvious.

However, pesticides approved by Health Canada's Pest Management Regulatory Agency, PMRA, also cause significant concern. Recent research carried out by DFO scientists led by Dr. Fred Page and Dr. Les Burridge out of St. Andrews to assess the potential impact of pesticide use should serve to highlight the danger of the pesticides being used in our shared waters.

The researchers mixed a non-toxic marine-safe dye with pesticides being used to treat sea lice so that the plume of pesticides could be tracked in the unpredictable Bay of Fundy tides. They found that with certain pesticides in certain conditions the plume contained levels of pesticides lethal to crustaceans between 100 metres and 1,000 metres from the treated farm.

Allow me to pause to emphasize that in a recent DFO study pesticide plumes have been found to remain toxic for a kilometre from the treated farm in one of the most biologically productive regions of the Bay of Fundy. Further, the dye and pesticide plumes in some instances have been tracked for several kilometres.

One serious consideration with the use of bath treatments is that the effluent from one treatment could pass partially diluted through another farm, potentially speeding up the development of resistance in sea lice exposed to a sub-lethal dose of pesticides.

The case of deltamethrin serves as a particularly potent example of why the increasing use of pesticides in the open-net pen salmon aquaculture industry is such a great concern. AlphaMax, the active ingredient of which is deltamethrin, was approved for emergency use in 2009-10. Deltamethrin is classified as super-toxic and can kill lobsters at levels as low as three parts per billion.

It's no surprise that fishers and others who depend on a healthy marine ecosystem become very concerned when such toxic substances are permitted to be released into our shared waters. The aquaculture industry continues to claim that pesticide usage is heavily regulated, while downplaying the potential impact of pesticides on non-target organisms. However, as federal government research continues to show, many of the pesticides used are toxic to non-target organisms, can remain toxic for a considerable distance from treated cages, and in some cases can remain detectable in sediments for over a year after treatment.

You may be wondering why I've spoken so much about sea lice and pesticides and so little about closed containment. It's simple. If salmon were grown in closed containment facilities I would have very little to say about pesticide usage.

Parasite infestations, and indeed disease outbreaks, which I haven't touched on here, are problems caused by an almost complete absence of biosecurity in open-net pens. I've referenced some of the excellent research being carried out by government scientists to identify impacts and potential impacts from pesticide usage and possibly provide some mitigation. However, we are in effect chasing mitigation heroically against all odds when the problem is in the technology we are using to grow fish. Problems such as parasite infestations, disease, and nutrient pollution cannot be adequately addressed in open-net pens.

If the Canadian aquaculture industry is as innovative as it claims to be, can we not expect it to find ways to grow fish without releasing untreated waste and chemical effluents into our shared coastal waters?

We would advocate a transition toward closed containment technologies. In addition, as something to put before the committee, an essential first step in this transition toward more sustainable practices in closed containment would be a ban on the use of pesticides in the open marine environment.

I thank you very much for your time, and I look forward to your questions.

● (1555)

The Chair: Thank you, Mr. Abbott.

Mr. Allen.

Mr. Mike Allen (Tobique—Mactaquac, CPC): Thank you, Mr. Chair, and my thanks to our witnesses for being here today.

We've had a large number of New Brunswick-based witnesses here at committee, which is a nice change.

I have a few questions on the Conservation Council and where you are on closed containment, which is the study we're doing.

Has the Conservation Council or anybody done any work on closed containment? Are there any studies or expertise that the Conservation Council has used in the closed containment debate?

Ms. Inka Milewski: We haven't, but it would be interesting for you to know that we appeared before the Standing Committee on Fisheries and Oceans in 2000 when it was discussing the sustainability of the aquaculture industry. At that time, we called for transitioning the industry to closed containment technology. That's 11 years ago. So we very much have supported this move and see it as necessary.

Mr. Matthew Abbott: I would just add very briefly that we do have an innovative, intelligent industry here, and I feel it's your role, as our government, to set limits and regulations so that this industry is expected to operate in ways that respect the marine environment.

I feel there's certainly the brain power within the industry to find the best way to transition toward closed containment. I don't pretend to be an expert on growing fish, but I think expertise is there, and if we provide the impetus to put that expertise toward sustainable closed containment technologies, I think we'll see an effective transition.

Mr. Mike Allen: So basically all your studies have been on the open net types.

Mr. Matthew Abbott: Yes.

Mr. Mike Allen: You said in 2000 you were talking about transitioning, and when you were speaking about that, what did you anticipate was a transition period in which you would expect this to happen? How long did you see that period?

In the Conservation Council, I know a number of your other efforts in New Brunswick have focused on water use. Has any discussion happened on the water use of bringing closed containment on shore? Obviously, there's going to have to be a water source. Have you talked about what that transition period is?

Ms. Inka Milewski: Back in 2000, there were already the beginnings of some technology development in closed containment. What I think is remarkable, and it has happened in the last 11 years, is that we're actually now talking about recirculation systems, so that closed containment systems are not constantly drawing water from some source and basically putting it out the other end. There is a lot of water conservation going on, recirculation and better filtration systems.

We know that kind of technology has been developed over the last 10 to 11 years and we know or read of, as I'm sure you do as the committee, systems that are in place like that currently. I don't know if you've heard from those people, but I do know they exist.

Mr. Mike Allen: Given that we're only at a point where maybe there are 200 tonnes or so, we don't have any commercial scale, by any stretch of the imagination. So given that we're not at a commercial scale but still at demonstration projects, what was your idea? I'd like to get your feel for what you think the transition period is.

Ms. Milewski, you also said “the current” regulatory environment. That suggests there could be a regulatory environment that might be successful. It begs the question then, if you're going to have a transition period, whether you must have some kind of regulatory environment that would have to be in place for the transition. Can you speculate on what that transition period is and what the regulatory environment would be?

Ms. Inka Milewski: I have to tell you that the only example I have to go by in how quickly technology can develop is based on my history. And this may not be an appropriate comparison, but it's certainly one that shows that when there is a regulatory sort of drop-dead deadline, the technology develops very quickly.

In 1990 some of you may recall that the pulp and paper industry was required by Environment Canada to get rid of dioxins out of its waste stream, dioxins being toxic in parts per trillion. This was one of the most hazardous chemicals known to man and it was a byproduct of the pulp and paper industry.

In 1990 the industry was told it had five years to get that dioxin out of its waste stream. The industry responded by saying, look, it was going to close mills, this was going to cost jobs—but in fact it did it in three years. It got dioxins out of the waste stream in three years' time because it had that looming deadline.

So when you ask me if they can transition, the technology is there. The question now is what is going to drive moving that more quickly, and I think it is a regulatory deadline. Why not five years? Five years could do it.

● (1600)

Mr. Mike Allen: That brings me to my next question then. Obviously, the Conservation Council has done a lot of work with respect to other countries and what they're doing as well, and it is taking other practices on the regulatory environment.

Mr. John Holder, who gave testimony the other day, talked about the competitive nature of the market, that Atlantic salmon is a commodity product and therefore people aren't going to pay the price for it. Therefore, by definition, if they move it on land it's going to be more expensive.

The coho can compete because of a niche market. So how do we compete against other markets? Are we just going to blow away our existing aquaculture market for other countries that are not going to do that?

Ms. Inka Milewski: I think other countries are beginning to eye this because they do see it as what the consumer is demanding. There is some consumer pressure to produce salmon in a way that doesn't harm the environment, that could avoid the use of pesticides and antibiotics, because in closed contained systems you have better control of these externalities.

I think in the market, combined with other forces, economic forces, perhaps, if you see these salmon being moved into closed systems—everybody is doing it—then that may drive the price of that technology down, which will then lower the price of salmon, and then it becomes very affordable.

We also know that when technology becomes mass technology, the price of the product produced comes down.

Mr. Mike Allen: Thank you.

The Chair: Thank you very much.

Mr. Donnelly.

Mr. Fin Donnelly (New Westminster—Coquitlam, NDP): Thank you, Mr. Chair.

I would like to thank our guests for being here today as well.

Just as a note, I'll split my time with Mr. Cleary.

You mentioned that you are proponents of closed containment in terms of the aquaculture industry on the east coast. This is a two-part question. Do you know of any other members of the public or other industries that support that position in eastern Canada? Could you also explain why you think improving open-net aquaculture isn't the way to go to move forward?

Mr. Matthew Abbott: I won't repeat what the Atlantic Salmon Federation has already said to you, but they're a major international organization on the east coast of North America. They have a pilot study under way, as you heard, into closed containment.

The other major environmental group in Nova Scotia, the Ecology Action Centre, has also done quite a bit of work in closed containment. There are closed containment facilities for other species in the Maritimes.

Ms. Inka Milewski: Currently there are several species that are grown in closed containment systems in Nova Scotia. It's a technology that is used to raise smolt. It's salmon. Before they are put into open-net pens, they're grown in closed contained systems on land. It's just a matter of transferring that to the adult salmon.

Mr. Matthew Abbott: This is to the second part of your question. There has been a lot of work that's gone in over the past 30 years in Atlantic Canada into trying to mitigate the impacts of salmon farms. We've seen mitigation measures to try to capture nutrients. So far they've been, in effect, unsuccessful, and we still see toxic sulphide levels, as Inka was showing, under farms that are trying to use these mitigation measures.

As I mentioned, there are a number of efforts for non-chemical controls of sea lice, but it's recognized by industry that those aren't going to be able to work alone. So they plan to continue using pesticides, and indeed they are arguing that they're going to need a broader suite of pesticides, some of which—like the one I mentioned, deltamethrin—are incredibly toxic.

There has been a lot of work in mitigating and trying to fix open-net pen salmon aquaculture. But the problems with it—the waste stream not being managed and having no biosecurity—are such big problems that it's not something we've been able to mitigate away. And I don't think there is any reason to expect we will be able to in the future.

● (1605)

Mr. Fin Donnelly: Thank you.

In your presentation you talked about sulphide levels exceeding recommended levels. You talked about chemicals, certain pesticide applications. Have there been any other impacts, or impacts to other industries? I'm thinking about lobsters, which you referenced, and shellfish or urchin industries? How have these industries reacted?

Ms. Inka Milewski: A report was released earlier this year by a researcher at the University of New Brunswick who interviewed traditional fishermen, who have obviously fished for 30 or 40 years. There is a very distinct pattern that fishermen observe when fish farms go in. Initially when the farm goes in, they notice some of the species they are interested in—lobsters, sea urchins, scallops, groundfish—move in. But as the organic load increases, the bottom becomes very toxic and the water quality is very poor. Those species are displaced and they disappear, and sometimes they don't come back. The fishermen have basically said, “We've lost some of those fisheries. We can't go after that species any more. We don't know where they are. They're not in our traditional fishing areas.”

Mr. Matthew Abbott: I think it's important to recognize that lobster landings in southwest New Brunswick have gone up. We're not trying to hide that. Research is beginning to show that factors around a loss of predation—primarily groundfish like cod that are no longer present—might be an indication of why lobster landings are going up.

There is a clear trend, where fishermen are seeing changes in lobster behaviour around salmon farms. Female lobsters carrying eggs stay away from farms after a few years of production. So we're seeing very real impacts, but we acknowledge that this is a changing ecosystem.

One of the concerning things is that we don't have a full handle on what's going on in the oceans. We know there are concerning changes occurring, and we feel very strongly that we should be removing pressures like open-net pens, given the state of our oceans.

Mr. Fin Donnelly: Thanks.

For my remaining couple of minutes I'll pass it over to my colleague.

Mr. Ryan Cleary (St. John's South—Mount Pearl, NDP): Thank you, Mr. Donnelly.

Thank you, Mr. Chair. My apologies for showing up a little late, but I was caught up in a speech in the House.

Thanks to our witnesses for coming.

Mr. Abbott, I did some research, and you were quoted in the media earlier this month as saying that cuts to Environment Canada and the federal Department of Fisheries and Oceans will make it more difficult for government to investigate cases like the one involving Cooke Aquaculture and the dumping of pesticides—the charges against Cooke for the alleged dumping. You say it's going to make it more difficult to hold the aquaculture industry to account.

Would closed containment mitigate the effects of pesticide use and those types of dangers, in light of government cuts?

Mr. Matthew Abbott: I think so. Closed containment would effectively introduce biosecurity, so we wouldn't see the kinds of pest infestations that are leading to pesticide use in our marine environment.

Mr. Ryan Cleary: In your answer to Mr. Donnelly's question you said we don't have a full handle on what's going on in our oceans. How would you describe the danger, the environmental impacts, of open-net aquaculture?

● (1610)

Mr. Matthew Abbott: To stick with the examples we've used today, the waste stream isn't being managed. We're seeing excess nutrients from uneaten feed and salmon feces. There's chemical input from pesticides in particular, but also from antibiotics. So the waste stream is not being managed. I see that as one of the major sources of impact. You've already heard at length from organizations with a great deal of expertise in wild salmon health and efforts at recovery that there are serious concerns about the impact on wild fish as well.

The Chair: You're done.

Mr. Ryan Cleary: Thank you very much.

The Chair: Thank you.

Mr. Sopuck.

Mr. Robert Sopuck (Dauphin—Swan River—Marquette, CPC): Thank you very much.

Ms. Milewski, I really appreciated your presentation. It was a refreshing change from hyperbole. I like seeing numbers and graphs. I think Mr. Abbott's strongly worded statements about this certain state of affairs would be better backed up by numbers as opposed to emotion. Being a numbers kind of person, I think the numbers will tell the tale.

Ms. Milewski, how much time does it take for an abandoned site to revert back to the original condition in terms of the benthic invertebrates?

Ms. Inka Milewski: It depends on several factors: the length of time the fish farm has been in operation, the size of the farm, and the current conditions in the farm area.

It is interesting that my Crow Harbour site was only in production for 18 months, yet I didn't see a complete recovery for two years. I didn't have the time or the money to sample in the third and fourth years.

Mr. Robert Sopuck: Having worked in the forest industry in the past, I was used to pictures of new clear-cuts that always look bad, yet when you go back to a 30-, 40-, 50-, or 60-year-old forest, it is rapidly reverting to the original condition, so this is a piece of work that really needs to be done.

I was a little surprised that neither of your testimonies talked about the effect on wild salmon. For example, you're probably aware that the Atlantic salmon runs in eastern Canada are increasing fairly dramatically. This particular year was one of the best years ever, even though when I was on the Miramichi I couldn't catch a fish, but that's another story.

I asked Mr. Taylor of the Atlantic Salmon Federation point blank if we will ever need to commercially fish wild Atlantic salmon any more because of aquaculture—and I know their stand on net pen aquaculture—and he had to admit that the commercial fishing of wild salmon should probably never have to occur again, given the production of farmed fish.

Don't you think that's a significant advantage of net pen aquaculture?

Mr. Matthew Abbott: As you know, many organizations were cited or interested in the development of salmon aquaculture as a way to remove pressure from wild fish, but I believe as you heard from the Atlantic Salmon Federation, it is an abiding concern of ours, and I thank you for raising it. The reason I didn't address it is that I wanted to make sure I covered the topic I was covering in 10 minutes.

There is really clear evidence that there is some impact from open-net pens on wild salmon, so yes, commercial production of salmon takes pressure off a wild salmon fishery. But if the technology being used to commercially produce salmon is also harming wild salmon, then we're not necessarily much further ahead.

Mr. Robert Sopuck: The only way I'd accept that last statement is if any numbers are attached. I hear what you're saying, but without numbers it's not helpful.

At the risk of boring my colleagues to tears, I'd like to repeat what DFO reports in terms of west coast salmon. Coastal aquaculture has been going on there since 1985, and the report was that in 2010, Fraser River sockeye returns were 30 million, the best return since 1913. In 2011 the return was 4.5 million, which is an average return, and overall they report—I could cite this river by river—the Pacific salmon returns in the last couple of years have been good or better than average, and they report that 2011 was the best recreational salmon fishery off the west coast in many years. So again, I think you have to be very careful when you automatically assume and make blanket statements that wild salmon are affected by net pen aquaculture.

In terms of your point about wanting to see net pen aquaculture banned, that's your position, ultimately to transition away from net pens to closed containment?

● (1615)

Mr. Matthew Abbott: Yes.

Mr. Robert Sopuck: Good.

John Holder, who spoke to us, made the point that one of the advantages of closed containment aquaculture is that it can be done anywhere close to markets, whereas net pen aquaculture—and he didn't say this, but obviously net pen aquaculture has to be done near rural, coastal communities. Don't you think that an end to net pen aquaculture would have serious employment effects on coastal communities when closed containment aquaculture inevitably moves closer to inland markets, closer to Chicago and Minneapolis and so on?

Mr. Matthew Abbott: That's an excellent question and a very important part of the discussion. Again, I'll reassert that I'm glad your committee is taking this issue so seriously.

I would have a few things to say. That's something that I think needs to be considered; it needs to be taken into account when a transition is taking place. We also have to think about the displacement of other economic activities that may be occurring as a result of open-net pen salmon aquaculture. I say maybe, as I was very clear we're still trying to figure out a lot of this, but certainly in southwest New Brunswick we've had a very long and sustainable herring weir fishery, which are traps in coastal environments that catch schools of herring.

The evidence of their displacement by salmon farms is quite clear. It's contained in the CURA report Inka Milewski referenced. Even aerial photography of the outer Bay of Fundy, southwest New Brunswick, over the last 30 years makes a very compelling case for where you can see salmon farms coming in and then weir sites no longer being fished.

I think it's important to factor into that equation economic activities that may be displaced in the rural coastal environment as well, but I agree that's a major consideration.

Mr. Robert Sopuck: Yes, because it's government that's going to have to face the reality of the decisions. To say we should take that into account.... We certainly will, but it's a very stark decision that we'll have to make. The thing is, supporting rural coastal communities that have few other employment opportunities is a very high priority with this government.

In terms of the WTO issues, my colleague talked about the higher cost if we go to closed containment aquaculture. The farm market gets flooded with lower-cost, net pen raised fish because we are obliged to buy those under world trade rules. We can't shut them out. We may potentially see the end of closed containment aquaculture except for a few specialized situations.

I see my time is up. Thanks very much.

The Chair: Thank you very much, Mr. Sopuck.

Mr. MacAulay.

Hon. Lawrence MacAulay (Cardigan, Lib.): Thank you very much, Mr. Chair.

Mr. Abbott and Ms. Milewski, we're pleased to have you here.

You mentioned, Ms. Milewski, that the federal and provincial environmental assessments are not working very well. In your slides you indicated too that there are certain areas where the open-net concept is in place, and other than the worms that are not food for anything there.... In an area where there are no nets, there would be 17 or 18 different species.

I'd just like you to elaborate on that and on what effect you see that having on the area around the open-net area, what effect it would have on the wild salmon and other species.

Ms. Inka Milewski: Currently when an industry wants to site a fish farm somewhere, they have to go through an environmental assessment process, a federal as well as a provincial process. DFO has developed a decision support system. Basically, there's a checklist and a scoring system of factors that it has to take into account—the depth of the bottom, the proximity to other fisheries, the proximity to other net pens. This scoring system has been applied recently in two instances in Nova Scotia, in St. Mary's Bay and in Shelburne Harbour.

Despite failing to meet the criteria that DFO has set out, these farms have been granted permits to operate. In fact, in the case of Shelburne Harbour, these are now before the courts; the decisions that have been made by the province with advice from DFO have landed these farm applications in court. It's similar in St. Mary's Bay. Fishermen have come forward and said the farms were being put where they fish lobster. The consultants for the proponent for the fish farm have taken bottom video at a time of the year when we would not expect to see lobster and have said, “Look, we didn't find any lobster here. Therefore this is not lobster bottom.” Yet they've ignored the experience and the expertise of people who have fished those areas for 30 years. This is what I'm saying.

The environmental assessment process is where fishermen would come forward and say it's really not a good area because it's where they scallop, it's where they harvest sea urchins, where they lay their lobster traps, or it's an area where they don't actually fish but they know that fish go there to lay their eggs, or their young come to mature, and the habitat is important. They say the activity is going to displace those fish, that they're going to either not survive or go somewhere else and fail to develop.

This is why I'm saying the process is not effective.

● (1620)

Hon. Lawrence MacAulay: Has DFO basically admitted that they have not been effective or have not handled the situation properly in terms of the open-net concept? You referred to DFO acknowledging that there are great difficulties.

Also, you indicated that in these areas where the open-net concept is in place there are no herring. My understanding is that the herring are the food fish for an awful lot of species in the sea, so that would be a major loss.

Ms. Inka Milewski: It has been. I've participated in scientific advisory reviews that DFO has sponsored or has organized around impacts of salmon aquaculture. There is an admission that the waste discharge from these farms has a small and potentially large ecological footprint. The question is how you manage waste that is basically dispersed into the environment. The aquatic medium is a very difficult environment in which to manage waste. We see that. We see from DFO's own reports that in the coastal zone, because of all the discharges, whether they're from the aquaculture industry or sewage plants or pulp and paper mills or any other kind of activity, we need to put into place the most strict and rigid measures to reduce that waste.

But what do you do at the end of a large net pen? You can't put a pipe on it. This is the problem. Because you can't put a pipe on it, it's very difficult to regulate that waste. If you had closed containment technology, there would be an end of pipe. There would be water coming in. If it's not a closed circulation system, you'd have a pipe coming out and you could measure exactly what's coming out of that pipe.

Hon. Lawrence MacAulay: The eco-certification that's been mentioned here...do you see eco-certification becoming a difficulty with closed containment, or do you see it becoming a difficulty with the open-net concept because of what happens? Also I'd like you to comment on DFO's conflicting regulatory responsibility, as you indicated. Do you feel that closed containment or open-net fish farming should be under the control of DFO or should it be under some other department?

● (1625)

Ms. Inka Milewski: If we put it into a land-based closed containment system, we could take it completely out of the hands of DFO. Right now what we have is a department that has to make a decision around siting a farm in an area, and it actually has to ensure that the fish and the water quality in that area are protected, as its responsibility under the Fisheries Act. So it has to enforce the Fisheries Act—no habitat loss. But at the same time, it's making a decision to put a fish farm in an area where habitat loss will occur. It has yet to issue a subsection 35(1) authorization that says you can do that, because it does happen, as you can see from my results.

This is the conflict. Moving it to closed containment would take it out of the hands of DFO, and it would be regulated like every other industry that has an end of pipe.

Hon. Lawrence MacAulay: As long as we can make some money doing it.

The Chair: Thank you, Mr. MacAulay.

He just waits for me to cut him off.

I have a couple of questions before we conclude. You showed a lot of data, and it was very good, the data you showed, and you were specific to some certain sites. Mr. Abbott and Ms. Milewski, you both referred to nutrient loss from the sites that was contributing to the data that you displayed here today. First off, I'm sure you're quite familiar with multi-trophic aquaculture, because you talked about UNB as well and some of the research it's done. You referenced, Mr. Abbott, several times about it being such an innovative industry. I agree with you on that. That is an innovation that has been widely recognized and applauded—multi-trophic aquaculture. Do you have any data around a multi-trophic aquaculture site?

Ms. Inka Milewski: Actually, it's interesting. I had another slide in here, but I had 10 minutes.... That slide would have demonstrated it.

There are eight sites that are multi-trophic, which means growing seaweeds and mussels next to salmon farms with the expectation that the mussels will gobble up the waste and the seaweed will soak up the nitrogens, the nutrients. The reality is that it doesn't work.

The slide I would have shown you is about a site in Deer Island that is a multi-trophic site. The sulphide levels in the sediments before the site became an IMTA site were around 3,000. When it became a multi-trophic site, the sulphide levels shot up another 1,000 to about 4,000. It doesn't work for lots of reasons, which I've... there's lots of science around that. In fact, the key proponents of integrated multi-trophic aquaculture have written that it just doesn't do what they expected it would do, because of the scale of the issue and because mussels actually don't feed on particulate organic carbon. They actually have food preferences. They're not just garburators. They actually have specific food preferences. What they thought would happen isn't really happening. There's lots of evidence for that.

The Chair: Just so I'm clear, you're disagreeing with Dr. Chopin's conclusions with multi-trophic aquaculture—

Ms. Inka Milewski: Absolutely, yes. I'm not—

The Chair: —which has been widely acknowledged, recognized, and applauded. I just want to be clear on that now.

Ms. Inka Milewski: Absolutely, and it may be widely acknowledged and it may be widely trumpeted, but I can show you evidence that it does not work.

The Chair: On that same note, you talked also, Mr. Abbott and Ms. Milewski, about—I haven't seen the report—the evidence in the report by UNB, which was, quite frankly, anecdotal evidence provided by fishermen. I guess my trouble with it is that you referenced that report several times, but it is totally contrary to evidence brought forward to this committee by the Department of Fisheries and Oceans that shows catches and stocks of lobster in the Bay of Fundy. You actually acknowledged, Mr. Abbott, that they have gone up since the introduction of net pen aquaculture into the southwest Bay of Fundy. I'm having difficulty trying to balance where you're coming from with this. You make one point, but you also make a point that argues with the very same point. I'm trying to understand what the point is, to be very frank.

● (1630)

Ms. Inka Milewski: We've heard the aquaculture talk, and it's basically two statements. One is that lobster landings are up; the other is that aquaculture has been around and has been growing at the same time. What they have failed to prove is any causality, that one causes the other. You may very well have DFO scientists talk about stocks increasing, but I don't think they have—I'm sure they haven't—made any causal relationship to the presence or absence of aquaculture.

Evidence from fishermen who have been on the water may very well be anecdotal, but anecdotal evidence by fishermen who have been on the water for 30 and 40 years is in fact very valuable, and it has value in terms of anthropology and social science, so it is valid information. There's no reason why they should manufacture their observations. This is their livelihood as well.

I think one thing that can't be lost here is that, still, for every dollar in value of the aquaculture industry, the wild fishery generates $3 in value. For every one person working in the aquaculture industry, there are 5.5 people working in the wild fishery. The wild fishery has value, and its value is three times the value of the aquaculture industry. So when fishermen are telling you that they are concerned and are seeing trends over time, that's real.

In fact, something that I've looked at, and have studied, and have published on, is 200 years of ecosystem change in southwest New Brunswick. My colleague from Dalhousie University and I looked at all the data over 200 years that was available, the best available data from DFO, and we looked at the trends and patterns, and how changes have occurred in the ecosystem. They've occurred because we haven't managed our fishing effort very well. We haven't managed our industrial pollution, which has affected habitat and water quality. There are these changes that have occurred over time, and aquaculture is only the most recent to have an impact on our coastal waters.

The Chair: Thank you very much. We really appreciate your time today, and we appreciate your coming and appearing before this committee. On behalf of the committee, I'd like to say thank you once again.

We'll take a short break, and then we'll move into the next part of our meeting.

Thank you.

● (1630)

(Pause)

● (1640)

The Chair: Could I ask committee members to please take their seats so we can resume our meeting?

Thank you very much, members.

We have a motion from Mr. Donnelly to consider today. I'll ask Mr. Donnelly to read his motion into the record at this point in time.

Mr. Fin Donnelly: Thank you, Mr. Chair.

We've given notice. The motion is that the Standing Committee on Fisheries and Oceans consider the supplementary estimates (B) on or before December 6, 2011, pursuant to Standing Order 81(5), and that the minister be requested to testify.

I would just add that “on or before”, with the emphasis on, ideally, “before”, be noted.

The Chair: On the motion, Mr. Kamp.

Mr. Randy Kamp (Pitt Meadows—Maple Ridge—Mission, CPC): Thank you, Mr. Chair, and I thank Mr. Donnelly for the motion.

The only point I think we would raise on this side is that we are getting very near the end of the supply period. As the motion indicates, we only have a very few days. It's not really traditional in this committee—it is in some—to look at all of the estimates all of the time. We always look at the main estimates but not always at supplementary estimates (A) and (B). We wouldn't be breaking with tradition to not look at the estimates. I'm happy to do so, though, because it's generally good news. Usually there's an increase in spending in supps (B) that wasn't in the main estimates. We're happy to do that.

I guess my only advice would be that if we're going to do this in the future, we should sort of give a little bit more notice. Although we can ask the minister to come, ultimately it will be his decision whether it works within his schedule. I know he will try to respond. He will send officials if he can't be here. The tighter the timeframe you make it, the less likely it is that he will be able to fit it into his schedule. It's pretty tight between now and December 16, as you can imagine.

That said, I think we're prepared to support the motion.

The Chair: Thank you, Mr. Kamp.

Is there anything further on the motion?

Mr. Donnelly.

Mr. Fin Donnelly: It's duly noted. I appreciate the comments and the support.

The Chair: Thank you, Mr. Donnelly.

Mr. MacAulay.

Hon. Lawrence MacAulay: I want to thank Mr. Donnelly for the motion and also Mr. Kamp for the interjection. I would request that the minister be here for two hours, if possible.

The Chair: Are you making an amendment? Is that what you're suggesting?

Hon. Lawrence MacAulay: The minister is going to decide anyhow. I'm sure that Mr. Kamp will relay my—

The Chair: Okay, thank you. I just want your comments noted.

Mr. Allen.

Mr. Mike Allen: I just have a point on the motion. We can ask, but isn't it the clerk who will negotiate with the minister? Typically, on the committees I've seen, the ministers, if they come, come for an hour, and their officials are there for an hour. I understand the request for two, and I guess we can request whatever we want, but given the short timeframe....

The Chair: Traditionally, if the motion passes—I don't want to prejudge it—I ask the clerk to make contact with the minister's office to make the arrangements. That is what I generally do.

Is there anything further on the motion?

(Motion agreed to)

The Chair: That was quick and painless.

The other order of business we have today is the budget. I believe it's been circulated to all members. This is the final budget for travel, which the committee had discussed in the past. There have been some adjustments made. The total amount requested is $51,180.39.

Take a quick look through the budget before we have any discussion on it.

On the travel budget, Mr. Allen.

● (1645)

Mr. Mike Allen: Thank you, Mr. Chair.

To comment on this, if I'm reading this correctly, it means it would be one night there. Practically, will that be enough for us? Effectively, it'll mean travelling in the morning, and that will give us maybe that afternoon and the next morning and perhaps a little into the afternoon, and then we have to come back.

I was thinking this would be at least two full days for us to at least digest the closed containment situation down there, have a chance to tour and ask some questions. If we were to travel the evening or the afternoon of the day before, spend a full day, then do pretty much a full day the next day and come back that night, I could get my head around that. I think trying to squeeze us in...we'll be travelling all the time, and when we come back we'll feel disappointed that we didn't have a chance to take the time.

The Chair: Thank you, Mr. Allen.

Is there anything further?

Mr. MacAulay.

Hon. Lawrence MacAulay: I would have to agree with Mr. Allen. It's only going to be down and back. We're not going to see very much. If we're going that far, at least we should stay one day.

The Chair: Thank you, Mr. MacAulay.

Mr. Kamp.

Mr. Randy Kamp: Could the clerk clarify what we're actually doing? Are we only going to the West Virginia site? It says Washington, D.C. Were we going to do the site visit and somehow go to Washington, D.C., all in one day? How is that going to work?

The Clerk of the Committee (Mr. Georges Etoka): If I may, the idea is that the committee would leave here early in the morning and travel, based on arrangements made by the Virginia company we are visiting. We land in Washington, go to West Virginia, spend the day there, and come back to Washington, where we sleep for the one night. We can spend the next day in Washington meeting with regulators—I gather that's what the committee wanted to do—and then come back in the evening of that day.

Mr. Randy Kamp: Do we know there are flights that allow us to do that—leaving in the early morning and coming back in the later evening?

The Clerk: I have not looked into flights yet because it has to be approved before I start making any arrangements. But yes, that can be done.

The Chair: Thank you, Mr. Kamp.

Mr. Donnelly.

Mr. Fin Donnelly: Thank you, Mr. Chair.

I'm a little concerned that we would have less than one day at the Freshwater Institute, to check out the facility and then to spend some time asking questions. I wouldn't want to be rushed doing that. I could see a half-day with the regulators, but I'd like a full day at least in visiting the facility and seeing how it operates. Whenever we've done tours, that has been a really important part. Also, we want to sit down and ask the operators a lot of questions, I would imagine.

I personally like what Mike was suggesting in terms of an agenda. Perhaps it needs to include a second night. Certainly, that part of looking at the circulation systems and the operations is critical, I think.

● (1650)

The Chair: Thank you, Mr. Donnelly.

Anything further?

I talked to George, Mr. Donnelly, while you were speaking, about revising this budget to include a second night. That would allow us two full days in the area, so we'd be able to visit the Freshwater Institute and meet with the regulators and not be pushed on time. We'll basically add a second night and a second full day, if that meets the wishes of the committee.

I've asked the clerk to adjust the budget and bring it back on Thursday for members to look at. We'll deal with it at that time.

Are there any further questions or concerns with respect to the budget?

Mr. Donnelly.

Mr. Fin Donnelly: Once the request goes in on Thursday, what is the timeframe?

The Chair: That's something outside of our control. We submit it to the Liaison Committee, and they generally wait until they have a few requests before them. I would assume there would be a meeting fairly soon, because there hasn't been a meeting called since the original organizing meeting this fall to elect a chair and the subcommittee. I would think there'd be some requests piling up and the committee should be meeting soon.

Mr. Fin Donnelly: So is it safe to assume we will hear back before our session rises?

The Chair: I think that's a fair assessment. I think that's a safe bet.

Mr. Fin Donnelly: Thank you.

The Chair: Anything further?

There being nothing further, I will adjourn this meeting.

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