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Chair

Mr. Rodney Weston

Standing Committee on Fisheries and Oceans

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● (1535)

[*English*]

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

I'd like to thank our guests for joining us here today. As you have probably been made aware, and maybe have been following, our committee has been studying closed containment aquaculture. We certainly look forward to your presentation this afternoon, any comments, and the opportunity to ask questions. Committee members have been looking forward to this opportunity.

Professor Hutchings, I believe you're going to lead off with the opening statements and then both of you will entertain questions from the committee, is that correct?

If you want to introduce Professor Fleming in your opening statement, please proceed. The floor is yours, whenever you're ready.

Dr. Jeffrey Hutchings (Professor of Biology, Dalhousie University, Royal Society of Canada): Thank you very much, Mr. Chair.

Yes, indeed, I would like to introduce Professor Ian Fleming from Memorial University of Newfoundland. He has worked on interactions between farmed and wild Atlantic salmon since the late 1980s. He's also worked on Pacific salmon and so he brings expertise from Europe, as well as from eastern and western Canada.

My name is Jeff Hutchings. I'm a professor of biology at Dalhousie University. I've worked on Atlantic salmon since the early 1980s, and I've worked on interactions between farmed and wild Atlantic salmon since the early 1990s.

We come here not only as professors of biology, but also as members of a Royal Society of Canada expert panel that recently addressed some issues pertaining to climate change, fisheries, and aquaculture on Canadian marine biodiversity.

My opening remarks will basically reflect the briefs sent beforehand.

Canada has a geographical imperative to be the international leader in oceans stewardship. Canada has the longest coastline in the world. Canada's seas might well be the largest of any country. Eight of ten provinces and all three territories, comprising 86% of Canada's population, border salt water. Canada is an ocean nation.

Canada's oceans constitute a vital biological and physical milieu that supports human health, societal well-being, and creation of wealth.

Canada has the benefit of, and responsibility for, three coastlines that contribute to society in numerous ways. For thousands of years, Canada's oceans have provided habitat for species of traditional and cultural significance to aboriginal people. Today, sustainably exploited fish populations and environmentally responsible aquaculture operations should provide secure local and national access to the protein and oils contained in seafood.

Dr. Fleming and I are co-authors of a recent national report on oceans, prepared in response to a request by the Royal Society of Canada that an independent expert panel be convened to advise on a series of questions related to the sustainability of Canada's marine biodiversity. Following its deliberations from June 2010 to January 2012, the panel released its report on February 2 entitled, *Sustaining Canada's Marine Biodiversity: Responding to the Challenges Posed by Climate Change, Fisheries, and Aquaculture.*

Pursuant to the current interests of this standing committee, the report attempts to describe and forecast how aquaculture has affected, and is likely to affect, Canadian marine biodiversity; to determine whether Canada has fulfilled its commitments to sustain marine biodiversity; and to provide strong, strategically based recommendations to establish Canada as an international leader in oceans stewardship and marine conservation.

The environmental impacts of open-net sea pen aquaculture, as opposed to closed containment facilities, are commonly grouped into four categories: ecological interactions; genetic consequences; diseases and parasites; and habitat alteration. More specifically, these include concerns about chemical inputs such as antibiotics, antifoulants, and pesticides; nutrient-loading and deterioration of the sea bottom; sources of feed for wild salmon; the effects of escapees and use of non-native species; and the exchange of pathogens and diseases such as infectious salmon anemia between the local, natural, and farming environments. All of these interactions are known to occur in the open-net sea pens typical of Canadian aquaculture operations. Most or all of these interactions can be mitigated by closed containment facilities, particularly those deployed on land.

There is no other region of the world where open-net sea pen salmon farming is practised that has greater salmon and salmonid diversity, abundance, and natural ecosystems potentially at risk than in British Columbia. On Canada's Pacific coast, it is generally accepted that open-net sea pen salmon farms can cause infections of the salmon louse—a type of sea lice—and contribute to infections in native salmon, and that these infections can increase juvenile salmon mortality. There is reason to believe that the harm posed by pathogens might be greater than is currently perceived.

Turning to the Atlantic coast, unlike the Pacific, Atlantic salmon are native to Atlantic waters. Thus, there is a threat to wild salmon resulting from interbreeding between farmed salmon that escape from open-net sea pens and wild salmon.

To date, escaped farm salmon have been reported in 54 rivers and bays, which constitutes 87% of the watersheds that have been investigated since the inception of the salmon aquaculture industry.

Farmed salmon differs genetically from wild salmon. When farmed and wild salmon interbreed, the outcome is frequently negative for wild salmon. Compounding the documented environmental impacts of aquaculture is the fact that the abundance of wild salmon is at historically low levels on the east coast, especially where salmon aquaculture farming is prosecuted. These salmon populations have recently been assessed by the Committee on the Status of Endangered Wildlife in Canada.

Regarding pathogens, infectious salmon anemia, or ISA, has already caused enormous economic losses to salmon aquaculture and constitutes a threat to wild populations because of the magnification of pathogen abundance in sea cages. Just last week a third salmon farm in Nova Scotia was destroyed because of ISA.

The Royal Society report found the following pertaining to salmon aquaculture, and this is just a summary. First, wild bottom-dwelling organisms and their habitat can be affected by organic wastes and chemicals inputs. Second, exchange of pathogens between farmed and wild fish can threaten the persistence of wild populations. Third, interbreeding between wild Atlantic salmon and farmed escapees threatens the reproductive capability and recovery potential of wild salmon of conservation concern, and finally, open-net sea pens have far greater potential and realized negative consequence to marine life than closed containment facilities.

The sustainability of Atlantic salmon farming will continue to be debated until there is a fuller understanding and more meaningful inclusion of public values and opinions within aquaculture management and government policy decisions. For example, the lack of transparency and public reporting of diseases at aquaculture farms has hindered meaningful, constructive, and respectful debate. A higher standard of transparency and accountability by both industry and Fisheries and Oceans Canada should have been anticipated, but this has yet to be achieved.

From a statutory perspective, Canada continues to rely on a complex patchwork of federal and provincial laws to regulate the aquaculture industry. This existing patchwork of more than 70 pieces of federal and provincial legislation does not appear adequate for ensuring environmentally sustainable aquaculture and healthy marine biodiversity.

The Pacific aquaculture regulations, for example, lack clear legislative guidance regarding objectives, principles, and procedures, and existing licences in Atlantic Canada might be open to legal challenge for being beyond the constitutional jurisdiction of the provinces.

The Royal Society panel recommends that Parliament draft and enact federal aquaculture legislation that specifies requirements and guidance on national objectives and procedures for all aquaculture operations. Such a recommendation is not new. Indeed, a federal aquaculture act was recommended by this standing committee in 2003.

Benefits of such legislation include the assurance of a principled approach to aquaculture access and operations, clarification of property rights, and encouragement of an integrated regulatory approach. The Canadian Aquaculture Industry Alliance has been especially vocal about the need for Canada to join other major farmed seafood-producing countries in having dedicated national aquaculture legislation.

Canada faces significant challenges in its efforts to conserve and sustain marine biological life, in light of climate change, fisheries, and aquaculture. The simplest and best strategy to deal with these three stressors to biodiversity is to protect existing diversity, and rebuild depleted populations and species to restore natural diversity.

The challenge then will be to sustain species and populations at levels at which Canada's marine biodiversity is able to optimize the ecosystem services the oceans provide in support of Canadian society and the welfare of the global community. By improving and protecting the health of Canada's oceans, such a strategy will restore the natural resilience of Canada's ocean ecosystems to adapt in response to the challenges posed by human activities.

With specific reference to aquaculture, the use of closed containment technology, particularly on land, will mitigate many of the environmental and biodiversity impacts of open-net sea pen salmon farming.

The Royal Society of Canada expert panel asserts that an environmentally responsible aquaculture operation should represent a fundamentally integral component to any comprehensive strategy by Canada to assert its national and international ocean stewardship responsibilities.

Therein ends my opening remarks, Mr. Chair.

● (1540)

The Chair: Thank you, Professor Hutchings. That was pretty close on time. You must have practised that.

We'll move to questions at this point.

Mr. Sopuck.

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

I listened to the last sentence you read out and looked at your testimony on page 6, where you say that environmentally responsible aquaculture operations represent a fundamentally integral component. That's a fairly ambiguous statement for what is said to be an assertion.

Quite plainly, would you recommend that net pen aquaculture be banned on Canada's coasts?

● (1545)

Dr. Jeffrey Hutchings: I would not recommend that open-net pen aquaculture be banned on Canada's coasts. I think the report meant to —and tries to—take a balanced perspective of the realized and potential environmental impacts of open-sea net pen aquaculture vis-à-vis the alternatives from a closed containment perspective. So to answer your question, the society report does not advocate a ban on open-sea net pen aquaculture.

Mr. Robert Sopuck: In your testimony—and I read it fairly carefully—there was a lot of talk about the effect on wild salmon, something that's near and dear to my heart as a very avid fly fisherman. You specifically said that off the B.C. coast was a very important salmonid area.

Aquaculture has being going on there since 1985. A report from DFO, that I happened to get by emailing the minister's office to get some information, says that in 2010, the Fraser River sockeye returns were 30 million, the best return since 1913. In 2011, that return was 4.5 million which is an average return for that cycle year. I was told that 2011 was a good year in general for all salmon species.

I certainly share your obvious valuing of wild salmon stocks, but I don't see anything in the information I've been given that shows a direct effect between aquaculture and wild salmon stocks. Indeed, the 2010 Fraser River sockeye run, which was the best in history, seems to belie that.

Can you comment on that?

Dr. Jeffrey Hutchings: Yes, I can. The Royal Society report basically doesn't comment on the specifics of a particular region or salmon population. It identifies documented and projected influences on wild populations—not just fish—in the environment, in general, resulting from open-sea net pen aquaculture.

You specifically referred to the Fraser River sockeye, one particular species in one particular river system. Of course it's a very extensive river system. The report certainly does not make any direct link between aquaculture and Fraser River sockeye viability. It does not speak about specific effects on particular populations on the west coast, so it really does not make any direct link to Fraser River sockeye.

Mr. Robert Sopuck: As elected officials we have to make decisions that have direct effects on people's livelihoods. The more specific we can get in terms of scientific opinion, the better it is.

In the panel report it was noted,

> With the possible exceptions of pathogens, it is unlikely that the impacts of salmon net-pen aquaculture on marine biodiversity along BC's coast will be broad-ranging.

It seems to me the report is saying that any impacts can be mitigated.

Can you comment on that?

Dr. Jeffrey Hutchings: Yes. With respect to the B.C. coast—not the Atlantic coast, which is a different situation because Atlantic salmon exist on the Atlantic coast—the report indicates that any direct spatial impacts are likely to be localized and restricted to the areas of open-sea net pens, primarily as a consequence of the effluents that are released from the net pens into the water directly affecting the water bottom in that area. But broader-ranging influences might be realized by the exchange of pathogens and disease.

Mr. Robert Sopuck: One of the things that witnesses pointed out to us was that because of aquaculture production, especially on the east coast—and I guess the west coast too, for that matter—of Atlantic salmon, we will probably never have to commercially fish wild Atlantic salmon again.

Don't you think that's a good thing?

Dr. Jeffrey Hutchings: Given the current levels of Atlantic salmon abundance, I think that is a good thing. However, what the report attempts to do—and what I think those of us who work in this field try to do—is balance the overall benefits and costs of any particular action from an environmental, economic, and social perspective. One potential benefit right now might well be the reduction of pressures to commercially exploit wild Atlantic salmon, but that's simply one potential consequence of where things are at today.

Mr. Robert Sopuck: In your testimony, you talked about a “more meaningful inclusion of public values and opinions within aquaculture management and government policy decisions.” It seems to me that referring to “public values and opinions”, while every citizen can certainly refer to that, is not very scientific.

What we need, as policy makers, are cold, hard scientific facts. Public values and opinions are important to us, as elected officials, but I would suggest that restricting what scientists do to objective facts, and reporting them in a manner that we can put into the decision-making mix, is more appropriate. Could you comment on that?

● (1550)

Dr. Jeffrey Hutchings: I certainly can. One of the things that the Royal Society expert panel was asked to do was to provide broadly based strategic recommendations resulting from the potential consequences of climate change, fisheries, and aquaculture on Canada's marine biodiversity. We had policy experts and legal experts as part of the panel, so this particular element was felt to fall within the purview of the panel's expertise.

To be more specific, and perhaps more helpful, given your perspective, one of the key things that seems to be affecting the respectful, open, and transparent debate that might otherwise exist is a lack of information on disease and pathogens, the frequency with which salmon farms are inspected, and so on. This has tended to polarize the discussion. When the public is not permitted to see the information on disease, it tends to push people to a more polarized perspective. When all information is available to all people who are concerned about a particular situation, it makes for a transparent situation, and probably for a meaningful debate. But when some information is not made publicly available, I think people tend to veer to one polar extreme or the other.

Mr. Robert Sopuck: In my view, scientists should stick to science.

Thank you very much.

The Chair: Thank you, Mr. Sopuck.

Mr. Donnelly.

Mr. Fin Donnelly (New Westminster—Coquitlam, NDP): Thanks, Mr. Chair, and my thanks to Dr. Hutchings and Dr. Fleming. It's great to have you here.

Thank you for this report. I think it is a significant contribution to the scientific community. Certainly, it's helpful for this committee to look at in our deliberations on the impacts of aquaculture and wild salmon, as well as disease and parasites, just to name a couple of issues that we've been looking at over the past year and a half.

On March 8 of this year, the CFIA confirmed that ISA was found in a Nova Scotia fish farm in Shelburne. Recently, we had an ISA scare in British Columbia. I'm wondering if you could provide information on this disease and the potential threat, specifically to wild species, and the relationship between aquaculture and those wild species in Canada and possibly in other jurisdictions around the world.

Dr. Jeffrey Hutchings: I'll start, and then I'll pass it over to Dr. Fleming for an international perspective.

ISA first appeared in Canadian waters in the mid-to-late nineties in New Brunswick and resulted in losses of enormous numbers of salmon. Many farmed salmon had to be destroyed. This disease is basically anemia—red blood cells are reduced in abundance, and oxygen can't get to various organs in the fish. It's a highly infectious disease. Whenever you hold organisms of a farmed or wild nature in a very dense situation, the likelihood of disease increases dramatically. This particular disease is very infectious, very volatile. That is one of the reasons that entire sea cages are destroyed as a consequence.

ISA has been documented in some wild salmon. I know the Magaguadavic River in New Brunswick is one area where wild Atlantic salmon have been found to have this virus. Now, it isn't a natural virus, and one cannot say whether the virus originated from a farm or not. Some of these diseases, if they are transmitted to wild populations—particularly when wild populations are depleted and things like sea lice are carriers—pose a considerable risk to these depleted populations. This is one of the things the report attempts to point out.

There was a good example in Norway that I'll ask Dr. Fleming to address.

● (1555)

Dr. Ian Fleming (Professor of Biology, Memorial University of Newfoundland, Royal Society of Canada): Yes. I'd say that with ISA—I'll just follow up from what Jeff was saying—the classic example for ISA would be what happened in Chile. You're probably quite familiar with the collapse of the industry there as associated with the outbreak of ISA in that region.

In Norway they've had a couple of examples of outbreaks and diseases, some associated with aquaculture and some associated with just transferring fish to another area. I think one of the best examples is probably *Gyrodactylus*. That was not introduced into Norwegian waters by aquaculture; it was the process of transferring fish associated with hatcheries from the Baltic to the Atlantic.

As a consequence, Norway has since had to deal with about 40 to 50 rivers that have basically been destroyed—with almost no salmon left in them—by this external parasite that is a freshwater parasite that destroys all young salmon. They then go through the process of having living gene banks, which is a very expensive process to maintain the fish. They also then have the process of rotenoning rivers, which sounds quite horrible but basically kills off all sorts of organisms in the river with the hopes of restoring the populations of salmon in subsequent years.

Sometimes it works, but when it's a big river, it often fails. A lot of money has been sunk into this, and it's an ongoing process. Once you have it, it's hard to eliminate it. The idea is to be cautious at the start.

Mr. Fin Donnelly: I'll ask for just a quick clarification. On the hatchery, was that used for restocking? What was the purpose of the hatchery?

Dr. Ian Fleming: I don't remember off the top of my head what the purpose was initially.

Mr. Fin Donnelly: All right. Thanks.

Just to switch gears for a second, this committee is looking at the feasibility of closed containment in aquaculture and specifically salmon aquaculture. You said that one of the main findings of your report is that open-net sea pens have far greater potential and realized negative consequences to marine biodiversity than closed containment facilities.

I'm just wondering, given your comments earlier, what you would recommend in terms of closed containment in this industry. Is this something this committee should be looking at? Should it be phased in or used only at certain periods or...? Do you have—

The Chair: I have to interrupt you as per the Standing Orders. The bells are ringing at this point in time. Your time will stop at this point. The House will have to convene for a vote.

I'm just looking at the clock. With half-hour bells and a vote, this committee will reconvene no later than five o'clock.

We stand adjourned.

● _____ (Pause) _____

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● (1655)

The Chair: I call this meeting back to order.

Mr. Donnelly.

Mr. Fin Donnelly: Mr. Chair, given that we've just had the votes, which has caused an hour out of our schedule, I'm wondering if I could move a motion that we extend committee by one hour to allow our witnesses to do a full presentation. If the committee would entertain such a motion, I would so move that we extend the committee by one hour, given that we had this disruption today, and it was unplanned and unfortunate.

The Chair: As a point of clarification, Mr. Donnelly, are you moving a motion to extend it by one hour from now or one hour from 5:30, the normal time of conclusion?

Mr. Fin Donnelly: I believe we missed an hour, so I would say for that time that we missed, so it's adding on an hour.

The Chair: We would go to 6:30, then.

Mr. Fin Donnelly: Yes, before bells for the votes tonight. We have votes tonight.

The Chair: Thank you.

It's been moved by Mr. Donnelly that the committee extend the time today to conclude at 6:30.

On that, Mr. Hayes.

Mr. Bryan Hayes (Sault Ste. Marie, CPC): Unfortunately, I wouldn't be able to do that. Today is House duty day for me, so I'm expected back at 5:30.

The Chair: Is there anything further on the motion?

We'll call the question on the motion.

Those in favour of extending the committee today?

Those opposed?

(Motion negatived)

The Chair :Thank you, Mr. Donnelly.

Mr. Donnelly, you had the floor. You were questioning our witnesses here today, so I'll give you the floor back.

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

I believe I had posed the question before the interruption regarding one of the main findings in the RSC report, which was that open-net pens have far greater potential and realized negative consequences to marine biodiversity than closed containment facilities.

I believe Dr. Hutchings, you were engaging regarding that. I was asking about the impacts of open-net farming systems on marine biodiversity, and specifically on wild salmon.

Dr. Jeffrey Hutchings: Yes, thank you.

With respect to open-net sea pens, as I indicated in my presentation, there have been a number of documented instances and cases of consequences particularly to local environments as a result of things such as the release of antifoulants, pesticides, vaccines, and other debris and waste that have collected on the bottom.

On the potential for disease to be produced and potentially to be transferred to wild organisms, and on escape events as well, these are the types of things that the panel felt would be mitigated by closed containment aquaculture facilities, particularly those based on land insofar as escapes could be readily preventable. There is technology in place such that, with appropriate water filtration systems, vaccines and pesticides are not required to treat the salmon. Disease does not appear to be an issue. There also appears to be the technology to reuse 98% to 99% of the water with appropriate filtration systems, and also to take the waste and use it for hydroponics, greenhouses, and so on. There appears to be technology in place to mitigate many of the documented environmental consequences of open-net sea pens.

● (1700)

Mr. Fin Donnelly: This committee is looking at the feasibility of looking at closed containment and possibly moving to closed containment, if it was deemed economically viable.

Do you have any kind of a position or a suggestion about the industry making that transition? Should it be full or partial, or on the west coast or the east coast? Should it be over a transition period of years? Do you have an idea of what kind of a transition that would look like?

Dr. Jeffrey Hutchings: Of course I am a scientist, and I have been reminded as such.

Voice: Oh, oh!

Dr. Jeffrey Hutchings: What I will offer is the following.

I can't really offer in terms of timeframes, but what I can say, as a fish biologist in this country, is this. We have an extraordinary richness of freshwater fishes across Canada. There are countries such as Finland.... I was there three weeks ago visiting a seafood processing company that is taking advantage of closed containment yellow perch, lake whitefish, and pickerel—what they call pike-perch, but it's related to our pickerel or walleye. And we have many freshwater fishes in this country that are very amenable, or appear to be quite amenable to closed containment land-based aquaculture. It might be simply a case of these being additional markets, additional opportunities for people who would not need to live on the coast to participate in the aquaculture industry.

That's from a biological perspective, insofar as freshwater fishes appear to be more amenable, or as amenable as perhaps some others to this form of technology.

The Chair: Thank you very much.

Mr. Kamp.

Mr. Randy Kamp (Pitt Meadows—Maple Ridge—Mission, CPC): Thank you, Mr. Chair, and thank you, Dr. Hutchings and Dr. Fleming, for appearing before us. We appreciate your testimony and the contributions you've made over the years to fisheries and fish science in Canada.

Let me begin by saying I suspect it's hard to please fish biologists in terms of what managers do, like governments. I imagine you're hard to please because you look at things through a different lens than those who govern do. But I'm hopeful at least that you see some encouraging signs in terms of the approach that Fisheries and Oceans Canada is making.

For example, on the sustainable fisheries framework, are you completely pessimistic, or are you optimistic about where we're going in terms of our ability to manage in a sustainable way?

Dr. Jeffrey Hutchings: That's an extremely good question. I'm very glad you asked it. The panel indeed concluded that we have some very good policies in place. The sustainable fisheries framework, which you just identified, is indeed a very sound piece of policy. It reflects in fact the fisheries policies that are being undertaken in Australia, New Zealand, Norway, parts of the EU, and certainly in the United States.

However, having said that, having acknowledged that we have good policies in place, what the panel concluded was that while we're making some progress, we're not implementing the policies as rapidly as we might otherwise do. Given that other countries in the world appear to be making some progress in areas where we could be making progress. As for where I think we would be making progress if we were implementing these policies, the panel felt that if there are impediments to the implementation of policies, those impediments should be addressed.

But I would just reiterate that this policy framework is a very good one if we implement it to its full degree.

Mr. Randy Kamp: Feel free to jump in, Dr. Fleming, if you ever want to add on to this issue.

In your report I think you referred to as maybe an impediment—although I'm not sure if that's the word you used—the absolute discretion that the fisheries minister has. Can you comment on that.

Dr. Jeffrey Hutchings: To backtrack slightly, again one of the issues that the panel was asked to address was to assess the degree to which Canada is fulfilling, or has been fulfilling, its national and international commitments to conserve marine biodiversity. The panel observed that other countries appeared to be making progress in areas where Canada appears not to have been making progress, and not just recently, but maybe for at least the last two decades. So the panel concluded that there must be something of an institutional nature that perhaps might be reducing the rate of policy implementation. One of those might be the discretion enjoyed by the Minister of Fisheries and Oceans insofar as the Fisheries Act is not a prescriptive piece of legislation but allows for wide discretion.

For comparative purposes, in the United States they have an act called the Magnuson–Stevens Fishery Conservation and Management Act, which is highly prescriptive, defines what overfishing is, defines what the Secretary of Commerce must do if a fishery is deemed overfished, and so on. Basically if overfishing is taking place, then in essence the secretary's hands are tied to some degree insofar as a rebuilding plan must take place.

But we don't currently have those stipulations in Canada. It's probably an impediment for the minister as well. It might well be deemed that the ministers might in fact prefer to have that discretion reduced to some degree, but that was viewed as an issue.

● (1705)

Mr. Randy Kamp: Your conclusion was or is that a new Fisheries Act would be a good thing, one that provided for less absolute discretion at least and was more prescriptive in its approach to how fisheries are managed?

Dr. Jeffrey Hutchings: The panel concluded that it could be in the form of a revised Fisheries Act or, indeed, in the form of an enacting new legislation, perhaps along the lines of the U.S. Magnuson–Stevens Fishery Conservation and Management Act.

Mr. Randy Kamp: This next question is on a completely different topic, and I know we talked about this a number of years ago when we were on the east coast talking about the lack of recovery of northern cod. I was talking to some Norwegian legislators last week, and they were not fisheries experts but they told me that the cod have returned to Norway.

Maybe, Dr. Fleming, you know more about this, but can you tell me if that's true and why you think it's true, when are we still struggling to recover the biomass on the Grand Banks for example?

Dr. Jeffrey Hutchings: I can certainly address that.

Certainly it is true today that the northeast Arctic cod, which inhabit the Barents Sea, feed there in the Barents Sea, and then spawn along coastal Norway about this time of year, are doing extraordinarily well right now. Upwards of half a million metric tonnes are predicted to be caught this year, and the stock there is in better shape than it's ever been.

One of the things that differs between the Canadian situation and the Norwegian situation is that in the late 1980s both countries were sort of in tough shape from a cod perspective. What Norway did was to put immediate restrictions on catch. What that appears to have done is that it limited the catching of immature cod.

By that time, by contrast, in the Canadian context most of our fish that we were catching were immature cod, cod that had never reached sexual maturity, and that's simply because of a lack of abundance of larger, older cod. In a sense, we sort of dug a bit of a hole for ourselves, a biological hole that the Norwegians did not dig. So that would be one reason why their cod stocks have recovered to such an extraordinarily good level at present, but there are other reasons as to why northern cod have not recovered as rapidly as they might otherwise have done. There are positive signs; they've just been very, very slow coming.

Mr. Randy Kamp: Do you have anything, Dr. Fleming?

Dr. Ian Fleming: I think Jeff covered most of it.

Mr. Randy Kamp: Good. I think my time is up. Thank you very much.

The Chair: Thank you.

Go ahead, Mr. MacAulay.

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

Welcome, gentlemen.

On the new Fisheries Act or revised act, I take it that the report indicates you feel perhaps that the discretion the minister has to allow quotas in fisheries should go to a board, or committee, or somebody other than government. Is that what you feel? Or what should take place?

My concern is this, sir. When somebody else has the power, other than the politician, and you do not like what happens, what do you do?

● (1710)

Dr. Jeffrey Hutchings: Yes, it wasn't—

Hon. Lawrence MacAulay: On that, I'd like you to answer in that direction.

Dr. Jeffrey Hutchings: Okay.

It wasn't the intent of the report to suggest that non-government people identify what quotas should be. What the report was advocating, or the position that was being put forth, was that there should be three critical things in place from a fisheries management perspective. There should be a target—that is a target level of abundance that you want a fish stock to rebuild to and maintain its level at. There should be a limit—in other words, a level of stock abundance below which you do not want to fall. And in between that limit and that target, the percentage of the overall biomass that you can exploit from a harvest perspective is prescribed by what's called a harvest control rule. So if, for example, you are very close to the target, you would be permitted to take a greater percentage of what's available than if you were very close to the limit.

Many countries have put in place these harvest control rules. Once government has decided that a harvest control rule will form the basis for a fisheries management plan, then it relies on the government scientists to determine how close or how far away a given stock is from the target and reference. Then it would simply follow the harvest control rule and that would form the basis for the minister's decision as to what the quota should be.

Hon. Lawrence MacAulay: Very good. Not even too bad, really.

I couldn't disagree with you. I might like to, but I couldn't. That would make some sense, really. A lot of sense, really, in all honesty. We cannot deplete our stocks, and we have done it in certain cases. We've paid the big price, and the cod is one of them.

The current legislation pertaining to the aquaculture industry is inadequate. I'd just like you to comment, either one of you, on what took place legally in B.C. when it became the jurisdiction of the federal government. You indicated when you spoke that there could be difficulty in eastern Canada legally. Was that pertaining to what took place on the west coast? I'd just like you to explain more about that and what should be done.

With that, of course, if you could involve what we need to do to encourage aquaculture and to bring it forward faster, I would also like to hear that.

Dr. Jeffrey Hutchings: Again, there might be a couple of things.

With respect to the point about possible constitutional issues on the east coast, that was indeed predicated, as you suggest, by what happened on the west coast.

In terms of what might be done to promote aquaculture, one suggestion that I think is embedded in the panel's recommendations is that given Canada's ocean real estate, given the fact that it has the longest coastline in the world and the largest territorial seas in the world, it would be highly appropriate for us to be leaders in ocean stewardship and sustainable harvesting of those resources.

I think those who are in favour of some form of national legislation for aquaculture would take that as the point of departure. We have these obligations by virtue of our geography and by virtue of our commitments under various conventions internationally. Within that framework of having a financially viable, economically sustainable, but environmentally responsible aquaculture industry, it would be placed within that context.

This committee, with what it's doing right now, is ahead of the game. By looking at this technology and perhaps identifying a means by which Canada could place itself in that role of leader, this committee is ahead of what many others are doing.

Dr. Ian Fleming: I'll just add a little bit.

I think it would provide clarity to all interest groups as to what the legislation is. Right now it's dispersed across a series of different bodies, which makes it very difficult for fish farmers. It makes it very difficult for the public to understand what's going on. So I think a streamlined process that deals with the various issues associated with aquaculture could be a very effective method for everybody involved, and it would create a level of clarity.

● (1715)

Hon. Lawrence MacAulay: Basically, what we need is to be leading in technology. When you look at what took place in Chile, it nearly wiped out their fish farming. We, as a country with a long coastline, need to be leading in the technology. That's what you're telling us in regard to closed containment.

We just came back from a tour down in West Virginia in which the new technology was explained, and how it's becoming more affordable to do those things.

But you're not telling us that we need to do anything to get rid of the open-net concept, which is so valuable on the west coast. I know it's a great concern for politicians.

Dr. Jeffrey Hutchings: With respect to the open-net pens, one potential perspective is that it was an appropriate technology 20 to 30 years ago, when closed containment technology simply was not possible. But there seems to be a sense that the industry—and not just aquaculture, but other industries—is moving toward more environmentally sustainable, and arguably, responsible directions.

Now that the technology appears to exist to deal with closed containment aquaculture, that might well be the sort of thing that Canadian industry will be moving toward. Because other countries are doing it, and I think it would be nice if Canadian industry were at the lead of that.

Hon. Lawrence MacAulay: But you would not see the Government of Canada making that move. Am I correct in understanding that we should have the technology, but you don't expect us to pass any legal documents outlawing the open-net concept and moving to closed containment?

I think the dollar will decide that in the end.

Dr. Jeffrey Hutchings: Yes, I think that would be the panel's perspective as well, that it would not advocate that the government take such action.

Hon. Lawrence MacAulay: Thank you very much.

The Chair: Thank you, Mr. MacAulay.

We'll now move to a two-minute round, and Mr. Allen will lead off.

Mr. Mike Allen (Tobique—Mactaquac, CPC): Thank you very much, Mr. Chair, and thank you, gentlemen, for being here.

I just want to follow up on where Mr. MacAulay was going. Some of the testimony that we've heard—including at the Freshwater Institute last week—suggested that we could be 10 to 20 years, plus or minus, before we could transition to an economic closed containment environment. Down there, they're actually looking at stocking to densities of about 100 kilograms per cubic metre some time in the next month or two. In the fall they'll know how that's going to shake out.

We're really not there from a knowledge standpoint, so I'm glad to hear you say that a government decision to force this probably would be premature at this point in time.

But what would be your advice to government in terms of how we would proceed if we know it's 10 to 20 years, plus or minus? What would you say to that to deal with some of those economic considerations?

Dr. Jeffrey Hutchings: Indeed, I think the 10-year timeline might fall nicely within at least one of the agreements that Canada has made under the Aichi targets. Under the Convention on Biological Diversity, one of the targets is that by 2020 areas affected by aquaculture are managed sustainably and ensure conservation of biodiversity.

One could then view that 2020 target as something to be achieved with the use of closed containment technology. That would provide a target, an objective, that falls within some of our international obligations, but also a timeline that it need not happen next year. It would provide for sufficient time for the technology to advance itself to a point where fairly large-scale salmon closed containment aquaculture could take place.

As I was saying earlier, it need not always be salmon, it could be other species, it could be freshwater fish. The technology appears to be more amenable for those fish.

Mr. Mike Allen: I know that in some of those other freshwater species, they are getting those stock in density. With salmon, we haven't got there yet.

Do you know of any other places that are achieving these results? Other than the Freshwater Institute, we haven't heard of any that are going to those kinds of densities.

Dr. Ian Fleming: I believe they're doing some work in Iceland using closed containment as an option for Arctic char and other species. I'm not sure about the densities they're working at.

Mr. Mike Allen: But they're not working with salmon?

Dr. lan Fleming: They're not working with salmon, that I know of.

I did want to make the point, though, that one of the things we want to be careful of is that if we're moving toward closed containment, we don't just stick with the stasis of what exists in terms of open-net pens. At the same time we should work to improve those capabilities, so there should be legislation and attempts to improve or direct the improvement of open-net pen aquaculture, and there are options to do that as well.

● (1720)

The Chair: Thank you.

Mr. Cleary.

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

I have two minutes, so I'm going to be quick. I'm going to go off on a tangent as Mr. Kamp did and ask you a quick question about northern cod.

Mr. Kamp mentioned how Barents Sea cod has seen incredible improvements since the stock collapse of the nineties. At the same time, we haven't seen that kind of improvement in the northern cod stock. Would you say the reason why we haven't seen those kinds of recovery numbers is the absence of a recovery plan, because the key to any recovery plan would be recovery targets?

Dr. Jeffrey Hutchings: That would be a key part of it and that was also identified in the report—that there is no recovery target for northern cod. As a consequence, when the fishery was reopened in 1998 and then re-closed in 2002, quite a few fish were taken. So one of the consequences of making fisheries management decisions in the absence of a long-term plan, and in the absence of targets, is that you run the risk of unintentionally depleting a resource and preventing recovery.

Mr. Ryan Cleary: Dr. Hutchings, you and I have spoken in the past. You've been outspoken with regard to the muzzling of scientists and the fact that a lot of the time scientific information is not available to the public, and certainly not before it's been massaged by communications or by politics or whatever.

Do you still feel that DFO is muzzling scientists and limiting the availability of scientific information in a general way and specifically in aquaculture?

Dr. Jeffrey Hutchings: I think there are issues at play at present. There are barriers to the free and open communication of science from government scientists to the public and to the media.

With respect to aquaculture, in my personal knowledge and my personal opinion, more knowledge is available within government science that I think would enhance the debate if made available to the public.

So I think for various reasons, and I don't presume to know what all those reasons are, that there is perhaps an opportunity for a greater communication of science by government scientists to the public that would enhance the debate with respect to aquaculture and a variety of other issues.

The Chair: Thank you, Mr. Cleary.

Mrs. Davidson.

Mrs. Patricia Davidson (Sarnia—Lambton, CPC): Thanks very much, Mr. Chair, and thanks, gentlemen, for being with us today and for putting up with our going back to vote and having to wait through that period.

You're probably aware that we've heard a lot of different issues from a lot of different people during this study, but about four different things keep coming up over and over again, that in my mind, are negatives with open pen farming. We've heard about sea lice, we've heard about the infectious diseases, we've heard about the problems with escapees, and we've heard about the alterations to the benthic environment.

A couple of minutes ago when my colleague was asking you some questions, Mr. Hutchings, you talked about opportunities to improve the capabilities of open pen aquaculture. Would those improvements that you referred to but didn't elaborate on address those things that we have been hearing about as issues?

Dr. Jeffrey Hutchings: I'll let Dr. Fleming talk about this as well. As we've indicated, there is certainly an opportunity for the current technology of the open-sea net pens to be improved upon in terms of mitigating some of these issues.

Escapees, of course, are not good for the industry. They're not good for the environment, and they're not good for the industry. Indeed, to be fair to the industry, the incidence of escapees in Canada appears to be declining. That's a response by the industry.

With respect to infectious diseases, one of the things that can be done do reduce the incidence of infectious diseases is to be cognizant of the densities that fish are being reared at. The higher the density, the more likely it is that a disease will manifest itself, and if it does, the more likely it is that it will proliferate.

Those are two things. With respect to waste accumulation on the bottom, there is fallowing. There are techniques that can be undertaken there, but there are also things such as in the Broughton Archipelago in B.C., for example, where there already has been a move by industry in response to a variety of different pressures to relocate some fish farms out of the migration pathways of some Pacific salmon populations.

To be fair, to be balanced, there has been some improvement on the part of the industry, and there are some ways to mitigate some of these issues.

● (1725)

Dr. Ian Fleming: Having worked on these related issues for a long time, 20 years or so, the improvement is noticeable. There have been great strides. We still face the same issues, and we've reduced the number of escapes, but we have also produced many more salmon in net pens. The levels of escapes in total numbers probably remains fairly stable, though the percentage from an escapement is lower.

There are improvements in technology that can be made, standards that can be introduced, and moorings and collapse of cages that can be addressed. There are pesticide treatments whereby you close-contain the net pen when you're applying the pesticides, so that it doesn't escape into the environment, or it reduces the amount that escapes into the environment and reduces the amount you need to put into the environment in order to control things like sea lice.

There are all these incremental steps that are improving it.

As long as we have open-net pen culture, we're going to have escapes and we're going to have disease transmission, because it's an incomplete barrier. We can reduce it, but we can't eliminate it.

The Chair: Thank you very much.

Mr. MacAulay.

Hon. Lawrence MacAulay: Thank you very much.

What would happen if Atlantic salmon established themselves off the west coast? What effect would that have? Would it be a problem?

Dr. Jeffrey Hutchings: I think, first of all, one has to consider the probability of Atlantic salmon establishing themselves off of the west coast. On balance—and this was one of the conclusions of the report— there is little evidence that this has happened.

And to be fair, it's rather unlikely, I think, that it would happen. Atlantic salmon does not transfer very well. People have tried to stock Atlantic salmon in the Maritimes, across the country, and in different parts of the world, and it has not taken very well. It's not a particularly good invasive species.

Hon. Lawrence MacAulay: Very good.

Basically, if I understand you correctly, Dr. Fleming, it's important as we go down this road that the open-net concept basically not reinvent itself, but that we make sure to use every form of technology that can be used, in order to ensure that, for example, if you spray, it does not get into the waters and that type of thing.

If that's done then, if I'm understanding you correctly, you think both concepts could work quite well, if done properly.

Dr. Ian Fleming: Certainly, I would think that closed, land-based facilities will be better than open systems, for the very reason that it's a penetrable environment and a penetrable cage. Open-net pens are still going to persistently have those problems. They can be reduced, certainly, and that's what we have seen through time.

But ultimately, as long as you have an open system you're still going to have the exchange of water, and with the exchange of water is the exchange of all sorts of potential pathogens and the outfall and effluent. There are issues of trying to minimize those things while you're progressively moving towards another or ultimate solution.

You'll end up weighing the cost and benefits at the end. Is it going to be economical or won't it be economical to have land-based facilities? At the same time, you also have to say that for the current system we want to improve the sustainability of the open-net pen aquaculture that we have.

You base it on those trade-offs, and the industry will see the advantages and the disadvantages of either one.

Hon. Lawrence MacAulay: Basically, the almighty dollar will decide it in the end. That's your advice, too, if I understand correctly —not the government deciding, but the dollar deciding.

The Chair: Thank you very much.

Hon. Lawrence MacAulay: You cut me off.

The Chair: I know you'd be disappointed if I didn't.

Some hon. members: Oh, oh!

The Chair: Gentlemen, I'd like to thank you on behalf of the committee. Thank you for your patience today, and especially for taking the time to answer our questions and to appear before this committee. We certainly appreciate the counsel you've given us.

Thank you once again on behalf of the entire committee.

Committee members, we'll excuse our witnesses.

Before we adjourn, Mr. Donnelly, you want to move your motion.

● (1730)

Mr. Fin Donnelly: Thank you, Mr. Chair. Yes, I do.

I gave notice on this motion. I'll read the motion into the record.

I move that, because fleet separation and owner-operator policy is critical to coastal communities and to protecting independent fishers in the inshore fishery, the committee reaffirms its support for fleet separation and owner-operator vessels in the inshore fishery and opposes any move to eliminate this policy.

The Chair: Thank you, Mr. Donnelly.

It has been moved by Mr. Donnelly. The motion is being distributed.

Mr. Donnelly, do you have a brief statement to make at this time?

Mr. Fin Donnelly: Thank you. I do.

We've learned that the fisheries minister has been holding invite-only meetings on the so-called “modernization of the Fisheries Act”. One aspect being discussed is the fleet separation and owner-operator policy. That this government is considering getting rid of this longstanding policy has left many fishers on the east coast nervous.

I'm suggesting that we consider this motion to reassure those fishers that this, in fact, is not the case. When we vote on this motion, I would like to have a recorded vote.

The Chair: Thank you, Mr. Donnelly.

Mr. Donnelly, your motion has been officially moved, and we'll set aside some time to debate your motion in the future.

Mr. MacAulay, do you want to move your motion?

Hon. Lawrence MacAulay: Thank you, Mr. Chair.

I move that, because fleet separation and owner-operator policy form the backbone of the inshore and midshore fisheries on the east coast of Canada and that the removal of said policy would do irreparable damage to the fisheries along with hundreds of coastal communities, the Standing Committee on Fisheries and Oceans immediately undertake a study, including travelling to hold hearings with affected stakeholders across Atlantic Canada, on what the removal of the policy would mean in economic, social, and cultural terms, along with a comparative analysis of other jurisdictions where similar policies are not in place or have been removed, such as British Columbia, New Zealand, and Norway.

The Chair: Thank you, Mr. MacAulay. This motion has been moved and has been distributed to committee members.

Do you have a brief statement that you want to make?

Hon. Lawrence MacAulay: I do not know where government is going, but where I come from, I talk to fishermen on a daily basis. I haven't talked to a fisherman who has spoken to anybody involved in fleet separation or this new policy that the government is talking about putting in place.

The only thing I would like to see happen, looking at how vitally important it is for the thousand communities in Atlantic Canada—not only for the people involved in the fishery, but for every small business and in fact for the existence of the community itself.... It's important that the committee go to those areas and listen to what the people have to say. If we lose this policy.... Governments can make changes in a lot of things, but if you change this, it's over. You cannot come back.

That's why I truly hope that we get support and are able to travel to those communities, because if we do not travel to those communities and bring the recommendations back to the minister in order to save the owner-operator and fleet separation policy, these communities will not be there.

The Chair: Thank you, Mr. MacAulay.

As with Mr. Donnelly's motion, we'll set aside some time to debate this motion in the future.

Go ahead, Mr. Allen.

Mr. Mike Allen: I have just a really quick point. It's not a motion or anything.

I just would like to say that the trip we went on to Washington was one of the best committee trips I have been on in a long time, from an information standpoint. I want to say thanks to the staff for all the work they did, and specifically to George—in spite of his road rage —what a great job he did. Thank you very much. It was good. It was really well done.

Some hon. members: Hear, hear!

The Chair: We'll strike that part on road rage from the record.

Some hon. members: Oh, oh!

The Chair: Thank you very much, members.

The meeting is adjourned.

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