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## **Standing Committee on Fisheries and Oceans**

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**EVIDENCE**

**Thursday, November 29, 2018**

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**Chair**

**Mr. Ken McDonald**



## Standing Committee on Fisheries and Oceans

Thursday, November 29, 2018

• (1530)

[English]

**The Chair (Mr. Ken McDonald (Avalon, Lib.)):** Pursuant to Standing Order 108(2), we will have a briefing on reports of the commissioner of the environment and sustainable development, spring 2018.

I'd like to welcome our guests.

We have Philippe Morel, assistant deputy minister, aquatic ecosystems sector; Mr. John Campbell, acting director general, aquaculture management; Mr. Wayne Moore, director general, strategic and regulatory science; and by video conference, we have Andrew Thomson, regional director, fisheries management.

From the Canadian Food Inspection Agency, we have Dr. Penny Greenwood, national manager, domestic disease control section. Joining her is Dr. Michelle Illing, acting executive director, animal health directorate.

We'll start off with a presentation from the department. When you're ready, you have seven minutes or less, please.

[Translation]

**Mr. Philippe Morel (Assistant Deputy Minister, Aquatic Ecosystems Sector, Department of Fisheries and Oceans):** Thank you for the invitation to report on our progress on addressing the recommendations from the Commissioner of the Environment and Sustainable Development's report on salmon farming and its conclusions on how to improve salmon aquaculture governance in Canada.

My colleagues from the Strategic and Regulatory Science Directorate, the Aquaculture Management Directorate and, in the regions, Fisheries Management of Fisheries and Oceans Canada, are here to provide you with answers and give you more information on our measures.

My colleagues and I had the pleasure of addressing these recommendations at the Standing Senate Committee on Fisheries and Oceans last week.

As you know, aquaculture is jointly managed by federal, provincial and territorial governments. Fisheries and Oceans Canada is the primary regulator in British Columbia, and we co-manage aquaculture in Prince Edward Island with our provincial colleagues. In all other provinces, the provincial governments are the primary regulators of aquaculture activities.

Canada already has a strong aquaculture regulatory regime, but it can be improved. It is our goal to work towards a clear, consistent and responsible regulatory framework to support an environmentally and socially sustainable aquaculture industry in Canada.

The commissioner's audit made eight recommendations to Fisheries and Oceans Canada on managing the risks associated with salmon aquaculture in order to protect wild fish, one of which also implicates the Canadian Food Inspection Agency.

We have agreed with the recommendations set out in the report and are on track to deliver on the work necessary to address all eight recommendations.

[English]

Fisheries and Oceans Canada and the Canadian Food Inspection Agency are the two federal entities managing aquatic animal health in Canada. We coordinate our efforts and collaborate to deliver the national aquatic animal health program, or NAAHP. The agency is the federal lead for the NAAHP, whereas Fisheries and Oceans Canada provides research and laboratory diagnostic support. CFIA authorizes movements of aquatic animals under the program, subject to relevant import or domestic program requirements.

Fisheries and Oceans Canada also authorizes live fish movement based on the consideration of disease, genetic and environmental risk, via licences issued under section 56 of the fishery (general) regulations. These regulations are set to be amended to continue to clarify the roles of the department given the full implementation of the NAAHP in 2015.

Fisheries and Oceans Canada and the CFIA collaborate on studies exploring the disease interaction of wild and farmed fish to progressively adapt and improve fish health management practices and oversight. Additional measures are also in place in most provinces to further manage aquatic diseases.

In British Columbia, where Fisheries and Oceans Canada is the lead regulator of aquaculture and issues aquaculture licences under the Pacific Aquaculture Regulations, licence conditions are in place to ensure the continued conservation and protection of wild and farmed fish.

In Atlantic Canada, the provinces are the lead regulators of aquaculture and have developed a regionally standardized approach to disease evaluation via the issuance of a certificate of health for transfer for live cultured finfish.

In response to the commissioner's report, Fisheries and Oceans Canada and the Canadian Food Inspection Agency established an interdepartmental working group in May 2018 to directly address emerging disease issues. The working group is currently finalizing a draft joint policy on the management of emerging diseases of aquatic organisms in Canada, and is on track for implementation by the department and agency in April 2019.

The joint emerging disease policy would establish an interdepartmental committee to manage emerging diseases and provide for formal processes, including the timely dissemination of information between and within organizations. This committee would also work in close consultation with provincial veterinarians.

● (1535)

With respect to the work of the emerging disease committee, we will also explore how to better and more clearly communicate to Canadians the federal approach to managing emerging diseases in aquatic organisms, which is a key goal under the 2016-19 aquaculture development strategy that was approved by the Canadian Council of Fisheries and Aquaculture Ministers.

[Translation]

Additionally, the federal government is pursuing further initiatives that will help mitigate potential environmental impacts of aquaculture operations, such as a proposal to work together with provincial and indigenous partners, and industry to develop a collaborative, area-based approach to planning and managing aquaculture. This approach would assess and address potential cumulative environmental impacts within a defined, large-scale region.

The Government of Canada is also committed to advancing innovation in the aquaculture sector, particularly to improve environmental protection. Specifically, the government is embarking on a study that will look at the economic feasibility of different aquaculture production technologies along with their environmental footprint.

Fisheries and Oceans Canada understands that we must continually assess and adapt our management approaches to ensure we are protecting the environment, while fostering responsible growth and innovation in Canada's aquaculture sector.

I will conclude my remarks here, and my colleagues and I will be happy to respond to any questions that you may have.

Thank you.

[English]

**The Chair:** Thank you.

Now we'll go to the Canadian Food Inspection Agency.

I believe, Dr. Illing, you're going to start. You have seven minutes or less, please.

**Dr. Michelle Illing (Acting Executive Director, Animal Health Directorate, Canadian Food Inspection Agency):** Thank you.

Good afternoon, Mr. Chair and members of the committee.

I appreciate this opportunity to speak to our role in the regulation of agriculture, which includes aquaculture, and our ongoing collaboration with Fisheries and Oceans Canada.

The agency is the federal regulatory lead for animal disease. This includes diseases that affect terrestrial and aquatic animals. The list is broad and includes diseases that affect cattle, swine, horses, deer, bees, finfish, molluscs, crustaceans and other species.

On the international scene, the CFIA is recognized as the leading competent authority on animal health. We are Canada's representative at the World Organisation for Animal Health, sometimes known as OIE, and contribute to the development of international standards that are science-based and risk-based in order to facilitate safe trade of live animals and animal products.

Under the Health of Animals Act, the CFIA has the authority to control any disease of any animal, diseases transmitted from animals to people, as well as toxic substances.

As stated by my colleague, the CFIA works in collaboration with Fisheries and Oceans Canada to deliver the national aquatic animal health program, or the NAAHP, under the Health of Animals Act and supporting regulations.

Since the full implementation of the NAAHP in 2015, fish health management has moved from DFO to the CFIA, as the agency has the mandate to protect Canadian wild and cultured aquatic resources from serious disease.

The CFIA also has the mandate to maintain competitive international market access for wild and cultured fish and seafood.

DFO plays a key role in the delivery of the NAAHP through provision of laboratory diagnostic services and research.

Consistent with other animal health programs delivered by the CFIA, the goal of the NAAHP is to prevent the introduction and spread of aquatic animal diseases to both cultured and wild aquatic animals.

The NAAHP has the following components: an import control program, which includes control measures for foreign and domestic animal diseases; a domestic and foreign animal disease control program, supported by disease response plans and the requirement to notify the CFIA if disease is suspected; a domestic movement control program, which includes declaration of the disease status of Canada and parts of Canada; and a supporting disease surveillance program.

In addition, the NAAHP is designed to meet international aquatic animal health standards and works to maintain competitive international market access. In this realm, the NAAHP also includes an export program, where the CFIA certifies the disease status of cultured and wild aquatic animals leaving Canada.

As presented by DFO, the CESD audit of CFIA and DFO programs recommended that the departments clarify their roles and responsibilities for managing emerging disease risks to prevent the spread of infectious diseases and parasites, as well as mitigating the potential impacts of salmon farming on wild fish.

The CFIA and DFO have agreed with this recommendation and have since been working together to develop and document a formal process, as my colleague mentioned, a joint policy and associated framework, to discuss and evaluate emerging diseases and clarify the federal government response to mitigate potential impacts to wild fish. The scope of the joint policy has been broadened beyond salmonids to include infectious emerging diseases of finfish, molluscs and crustaceans. The draft policy will be completed by the end of 2018, and we're on track for implementation by April 2019.

The CFIA will continue to work closely with DFO, provincial and territorial authorities, indigenous peoples and the industry from coast to coast to streamline our regulatory authorities and deliver our mandate under the NAAHP to, first of all, implement controls to prevent aquatic animal diseases from being imported into or spread within Canada; and second, to safeguard Canada's natural aquatic animal resources.

Thank you for this opportunity. I look forward to your questions for both departments.

• (1540)

**The Chair:** Thank you, Dr. Illing.

Before I go to questions, I will remind the committee that we'll go to probably 5:45 p.m. with the questioning so that we have time to break and move into committee business.

**Mr. Colin Fraser (West Nova, Lib.):** It's not 5:45 p.m. It's 4:45 p.m.

**The Chair:** Yes, it's 4:45 p.m. At 5:45 p.m. some of us will be home. I tried to sneak in a few extra minutes for the committee, but it didn't work.

Now with the questioning, we'll go first to the government side.

Mr. Hardie, you have seven minutes or less.

**Mr. Ken Hardie (Fleetwood—Port Kells, Lib.):** Thank you, Mr. Chair.

Thanks, all, for being here.

Aquaculture is a sensitive issue out on the west coast, as I'm sure Mr. Morel and his colleagues are certainly aware.

Do we have enough science to really be convinced that aquaculture poses no risk to our wild salmon populations?

**Mr. Philippe Morel:** I will respond to what Mr. Moore mentioned to the Senate, that if you ask a scientist a question, the response will be no, there is never enough science. I think we have very good science, but I think the ocean is changing. We always have to adapt our science to the new ecosystem and to the interaction with fish that we are not used to be seeing there. I'll ask Mr. Moore to give more of an answer.

**Mr. Ken Hardie:** Be very brief, if you can, because I have a lot of questions.

Thank you, go ahead.

**Mr. Wayne Moore (Director General, Strategic and Regulatory Science, Department of Fisheries and Oceans):** Very briefly, as you pointed out, we always welcome more resources to do more

science. I think the process we have with working with managers, with stakeholders, to identify priorities means we're putting our money and our energy and the talent of our people where it needs to go.

**Mr. Ken Hardie:** I was going to ask about that. There was a fairly large allocation for new science, new scientists, new capacity. How much of that has been dedicated to the health of wild salmon?

**Mr. Wayne Moore:** In terms of the new resources, it's hard to parse out a specific share. The reason is that, of the new investment money that's going into, for example, the national aquatic animal health program, which we spoke about, into aquaculture research.... They are all areas, in addition to direct investments in salmon research as well and stock assessment that impact wild stock. There's not a linear relationship between the two.

• (1545)

**Mr. Ken Hardie:** The fact is that for a long time, questions have been raised. Certainly the report that you're responding to suggests that we're not necessarily covering all the bases, at least to the auditor's satisfaction. We keep getting reminded of the application of the precautionary principle because there are a lot of things that we haven't known that we don't know, and yet we've forged ahead.

I guess this is another leading question. When we look, for instance, at the location of the aquaculture installations, especially in the Broughton Archipelago, if we had it all to do over again, would we allow those things to go in there?

**Mr. Philippe Morel:** This is very difficult to answer. We will certainly have more scrutiny than we did at the time, but that doesn't mean the conclusion would be different. So more scrutiny, more consultation before issuing some siting licences.... I don't know if Mr. Thomson can add to that, if he has some information to share.

**Mr. Ken Hardie:** If there's not a definitive answer of yes or no, then "it depends", I suppose, is an answer. It just leaves a window of doubt open.

The transparency of the operations on the west coast is in question. I've had numerous conversations with Alex Morton, who attempts to go in and conduct research. She's driven off and banned from being there. I think sunshine is the best disinfectant here, because the more that happens, the more there appears to be gaps in either perception or reality. I don't know why she isn't given full rein to go in and conduct what she wants to conduct, peer review it, and either disapprove of it or support it, as the case may be.

Sir, from Vancouver, do you have a thought on that?

**Mr. Andrew Thomson (Regional Director, Fisheries Management, Department of Fisheries and Oceans):** Yes, thanks very much, Mr. Hardie, for the question.

In terms of transparency, our regulatory program, which requires a significant amount of monitoring and reporting as well as auditing by our regulatory staff, is largely reported on our website. There's a vast amount of data as to sea lice counts, use of antibiotics, how much deposition, predator control and interactions. All this data is on the website. In terms of transparency there really is a very significant amount of information already put out into the public sphere.

**Mr. Ken Hardie:** You're dealing with a perception issue, and as long as you have a situation where somebody is forbidden from going on and exercising what talents they can bring to the table, it is going to raise questions—and questions have been raised.

This question is for the Canadian Food Inspection Agency.

Are you comfortable with, if you like, the sharing of duties and authorities with the DFO? On the one hand you have the responsibility for the health of the fish, which leads into my last question, but the DFO, of course, has a responsibility to basically help and support the aquaculture industry, even though the Cohen commission said that was a bad mix for you guys. As far as the CFIA is concerned, are you convinced that the health of these fish is adequately monitored and that they are indeed in good health?

**Dr. Penny Greenwood (National Manager, Domestic Disease Control Section, Canadian Food Inspection Agency):** When we talk about health, health is a combination of factors. Under the fishery (general) regulations, we have actually only taken over the part of fish health that involves disease, with the implementation of the national aquatic animal health program.

The genetic and the environmental health factors still rest with the Department of Fisheries and Oceans and we're very clear about the division between those things.

There are a lot of things that come to bear on an animal's health. I think we're comfortable with that. We are looking at separate components of that, all of which contribute to the overall health of the fish.

• (1550)

**Mr. Ken Hardie:** Okay. Thank you.

**The Chair:** Thank you, Mr. Hardie.

Now, we'll go to the Conservative side with Mr. Arnold.

**Mr. Mel Arnold (North Okanagan—Shuswap, CPC):** Thank you, Chair, and thank you to all of the witnesses for being here today.

It was interesting in the spring when we went over the commissioner's report with her and started looking at some of the fine details in it. The one troubling thing that I saw, which was cause to have you in for this meeting today, was the two departments' responses to the recommendation.

The recommendation is, "Fisheries and Oceans Canada and the Canadian Food Inspection Agency should clarify their roles and responsibilities for managing emerging disease risks to mitigate potential impacts of salmon farming on wild fish".

I have to make sure I get the responses right because they contradict each other.

This is from DFO: "Agreed. Fisheries and Oceans Canada will continue to work collaboratively with the Canadian Food Inspection Agency, the federal lead for managing diseases of both farmed and wild fish..." Note that DFO identifies CFIA as the federal lead. CFIA's response is that CFIA "will work with Fisheries and Oceans Canada to develop and document a formal process to discuss and evaluate emerging diseases of concern to either government entity and decide which entity will assume which role or responsibility with regard to such diseases in order to protect wild fish."

Fisheries and Oceans has said that CFIA is the lead role and then CFIA says you have to get together and sort that out still. Why is there the discrepancy in the response? Has there been progress made towards sorting out that discrepancy?

**Dr. Penny Greenwood:** During the audit, they felt that the roles and responsibilities were clear on the existing fish health topics, so in my previous answer, I have just said that DFO is clearly responsible for genetic and environmental and we're clearly the lead for disease.

The thing about emerging disease is that we never know when an emerging disease comes up whether it's going to be one of great significance to Canada or not. The way that the national aquatic animal health program works is that we don't necessarily have controls on all diseases. Through consultation with our stakeholders, we decide which disease we're going to put specific controls or responses on and which we will allow industry or the provinces to manage.

As a result of that, the DFO would like to be at the table for those discussions and those consultations to be able to make the primary decision about whether or not this is going to be a disease that CFIA adds to their list, for which they will have a response or a concern about. There may be components associated with the environment or genetics that play into that as well, so it was necessary for the emerging diseases to say that, since it's a little bit fuzzy, we will specifically address that through policy.

**Mr. Mel Arnold:** How have you addressed that between the agency and department?

**Dr. Penny Greenwood:** As both of the introductory comments noted, there has been a working group, from both the department and the agency, that has been sitting together. They have drafted a policy which should be finished by the end of 2018. That policy says there will be a committee that will be formed from the department—both national headquarters staff, as well as regional staff, and both from the west coast or the east coast because they are very significant players on the fish health files, obviously—and from CFIA. As we bring information of different sorts to the committee, that committee will develop a list of what the current emerging disease concerns are that the department and the CFIA think are of importance. Then they will together decide how to proceed with risk assessments and decisions on whether or not CFIA will have a response, surveillance or controls over that particular disease.

**Mr. Mel Arnold:** Thank you.

Recommendation 18 in the Cohen commission report states:

If at any time between now and September 30, 2020, the Minister of Fisheries and Oceans determines that net-pen salmon farms in the Discovery Islands (fish health sub-zone 3-2) pose more than a minimal risk of serious harm to the health of migrating Fraser River sockeye salmon, he or she should promptly order that those salmon farms cease operations.

Can I take it that since there has been no order to those farms to cease operations, there has been no indication of anything more than minimal risk from the net-pen aquaculture at this time?

• (1555)

**Mr. Philippe Morel:** Mr. Thomson, do you want to answer this one?

**Mr. Andrew Thomson:** No, there has been no order. My colleague, Wayne, can further lay out that it's part of the process of going through a series of risk assessments under the Canadian science advisory secretariat umbrella and looking at the pathogens that are currently present and determining what that risk is, in terms of transmission and impact on Fraser sockeye, as per the Cohen recommendations. There have been a number of these scheduled and a few of them performed.

My colleague can probably outline which have been performed to date.

**Mr. Mel Arnold:** The question is quite clear. Have there been any instances of, as the recommendation says, "more than a minimal risk of serious harm to the health of migrating Fraser River sockeye"?

**Mr. Wayne Moore:** On the risk assessment, we've committed to do 10. We've completed and published one. The next four have just been completed and we're in the process of seeking the lead author's approval.

The first one determined that there was no more than a minimal risk. Right now we have not seen anything that would suggest there is more than a minimal risk, which would lead to triggering Commissioner Cohen's condition.

**Mr. Mel Arnold:** You still have five to do. This report came out in 2013, and that is five years ago. You have two years left.

At what stage are you on the other five?

**Mr. Wayne Moore:** That is an excellent question. Thank you to the member, via the Chair.

As I mentioned, the first one is completed and published. We have recently held a peer review on the next four with a set of scientists from inside the department. External experts have looked over the next four as well, which are really bacteria-driven pathogens. That's in the process of being finalized.

The steering committee just met for the sixth one yesterday. That work is well under way. We're targeting the end of January for that peer review with external experts. We're reaching out for data from a wide range of sources.

We'll finish the next four over the course of 2019 and the beginning of 2020 because some of them can be done in pairs. As well, we'll do a summative one, which looks at the cumulative impact of all these disease risks. Looking at them one by one is not sufficient in and of itself, so we also want to do a summary piece.

We're confident that we can meet the timeline set out in the response here, as well as by Commissioner Cohen.

**Mr. Mel Arnold:** Thank you.

**The Chair:** We'll now move to Mr. Donnelly, for seven minutes or less, please.

**Mr. Fin Donnelly (Port Moody—Coquitlam, NDP):** Thank you, Mr. Chair.

I'd like to thank the departmental officials for being here on this important discussion.

I want to continue on the aquaculture discussion.

Disease, viruses and sea lice have been a long-standing problem with aquaculture. I am going to specifically focus on the west coast because that's where I'm from and that's what prompted me to become an MP back in 2009. It was on this one. It was former prime minister Stephen Harper who called the inquiry into the missing sockeye salmon in the Fraser River. That is something I got involved in right off the bat, before becoming an MP. That was in 2009.

I want to specifically focus on PRV and HSMI. Why has it taken so long to put together an interdepartmental committee to finally focus on this? I'm just hearing 2018. This has been an issue for over 10 years. I know it's been longer. Why has it taken so long?

**Mr. Wayne Moore:** I think, in fact, there's been a great deal of work done on PRV. What we're seeing now is a very formal, structured risk assessment of the impacts of not just PRV but—

• (1600)

**Mr. Fin Donnelly:** Sorry to interrupt, but you're talking about what's happening now. Why has it taken 10 years?

**Mr. Wayne Moore:** I would suggest that, in order to get to this point, it's required a lot of research and input.

In fact, in 2015, there was a fairly substantive science advisory process, which had a science response that summarized the knowledge to date around PRV, HSMI and idiopathic heart disease as well.

We've been investing in research. Research doesn't happen overnight.

**Mr. Fin Donnelly:** Fair enough. That's a good answer, thanks. It's taken a long time to do your research, and I appreciate that.

When I was here in 2009, it was all about sea lice. We had departmental science on one side, academic science on the other, industry, etc. It was a major battle. It continues to be that way, it seems.

Has the government ever allowed, or is it allowing, diseased salmon eggs into the country?

**Dr. Penny Greenwood:** CFIA, under the national aquatic animal health program, controls imports of live fish as well as germ plasm from fish, and that would include fish eggs. We have very strict import conditions associated with disease. We do not allow any eggs into the country that we feel would be a risk for any of the diseases that we don't have or that are not controlled to the degree that we control them within Canada.

We're pretty stringent on our import controls for salmon eggs coming into Canada.

**Mr. Fin Donnelly:** Can I safely assume that's a no?

**Dr. Penny Greenwood:** That we haven't had any come into Canada?

**Mr. Fin Donnelly:** Salmon eggs, yes. On the west coast.

**Dr. Penny Greenwood:** That is not my area of expertise. My colleagues take care of imports. I wouldn't have the stats at my fingertips.

**Mr. Fin Donnelly:** Is it possible to get that to this committee?

**Mr. Philippe Morel:** I think Mr. Thomson may have....

**Mr. Andrew Thomson:** We do have statistics on the imports. It's been a number of years since we've had any importation of salmon eggs to the west coast of British Columbia. The vast majority of the industry, if not all of the industry, operates on domesticated stock that produces its own brood stock and egg source within British Columbia.

**Mr. Fin Donnelly:** I'm not sure, Andy. Is that a yes or a no?

You're saying it's been a while. I get that. When we did, did we ever let diseased eggs into the country? It sounds like you're saying no.

**Mr. Andrew Thomson:** You're asking for an absolute. The reality is, we've had importations of fish eggs going back into the late 1800s. There was a series of importations of salmon eggs that go back a long period of time.

If you're asking me to certify that, in 1850 or 1880, there was no disease on those eggs, I'm not sure I would be able to do so.

**Mr. Fin Donnelly:** Okay, I could have clarified and asked about the last 10 or 20 years, but fair enough. I'm not sure if, back at the turn of the last century, it was as much of an issue as it is now, but I can tell you that the industry is having a hard time continuing, because this is a continuing issue today. It has been since I've been an MP, which is almost a decade.

That's the focus that I'm getting at. We hear a lot of he-said-she-said on science. What I think this industry wants is certainty to move on. What the commercial fishers and first nations along the west coast want is certainty that their way of life is not being impacted.

I know salmon sport and recreational fishers are concerned that disease coming in from Norway or other countries is affecting our wild salmon. They rely, as we do, on the department and the Government of Canada to protect them and their industry.

I'm not trying to be glib, and I'm not trying to get a certain answer. I'm hoping for a certain answer. I'm hoping the answer is no, we've never let any diseased eggs in the country, because that's the accusation; that's what we're hearing. It would be good to know that.

In terms of the interdepartmental committee, have we spoken to Norway and taken advantage of their advice and what they've been going through with this problem? They have a more mature industry than we have. Has Canada spoken to Norway?

•(1605)

**Mr. John Campbell (Acting Director General, Aquaculture Management, Department of Fisheries and Oceans):** We hold regular meetings with Norway, Chile, and other cold water aquaculture producing countries. We have a quad meeting we run once a year. In terms of picking up the phone, that's easy now to do. We're well established in terms of our relationship with Norway as well as following their technologies and other things that they're currently doing.

**Mr. Fin Donnelly:** How often does this committee meet?

**Mr. John Campbell:** The quad committee meets about once a year. Actually, it is once a year, but there are other opportunities to meet on the margins of various international meetings. It's something we try to do and it's not only just in aquaculture. The Government of Canada often uses meetings to make sure that we're constantly talking with our interlocutors in terms of all of our issues.

**Mr. Fin Donnelly:** When did the committee first—

**The Chair:** Thank you, Mr. Donnelly. It's over time now. I'm sure you'll get another chance.

Mr. Rogers, you have seven minutes or less, please.

**Mr. Churence Rogers (Bonavista—Burin—Trinity, Lib.):** Thank you, Mr. Chair.

Welcome, guests.

I'm on the other side of the country on the east coast. We have a very different perspective on some of the industry from some people on the west coast.

In Newfoundland and Labrador the province is responsible for licensing, inspections and enforcement while DFO is responsible for habitat protection. There's a shared responsibility, and it's much different from what happens on the west coast of the country. I want to ask you a couple of questions around that.

The audit recommends that DFO needs to provide long-term funding for research on the effects of aquaculture activities on wild fish.

How much yearly funding is provided for that type of research and is an increase or a decrease in funding expected?

**Mr. Wayne Moore:** Right now, we're spending about—and this was documented by a recent evaluation that is available on the department's website in the transparency section—about \$14 million a year on research, which supports research as well as just over a hundred people involved in the research enterprise. It's not an insignificant amount. This reflects a bump that the current government has made in the recent budget 2016 where additional investments were made as well as a recent renewal of the sustainable aquaculture program for a two-year period.

Am I expecting any additional resources? I'm always hoping for additional resources in science, and it's a decision for the government to make regarding those resources. Again, what we try to do with the resources available is to set the right priorities, try to listen to the broadest range of science and management needs, and try to target our energies accordingly.

**Mr. Churence Rogers:** Thank you.

The audit explains that DFO lacks sufficient laboratory capacity to provide surveillance test results to CFIA in a timely manner. I know in Newfoundland and Labrador, the government invested several million dollars in a fish health facility in the Coast of Bays region on the south coast of the province. Can we say the same thing for both the west coast of the country and the east coast?

**Mr. Wayne Moore:** Just to clarify, is that in terms of the capacity issue?

**Mr. Churence Rogers:** Yes.

**Mr. Wayne Moore:** At the time of the audit and with the evidence that the auditors had available to them, in fact, there was a continuing challenge that we faced in working with our colleagues to meet the lab demands of our colleagues at CFIA. The lab network is under my responsibilities. With the investments from the 2016 budget, in fact, we've been able to augment that capacity by about 40%, so in fact we've very much strengthened the work that we do. Are there areas particularly in terms of surveillance where there are opportunities to do better? Of course, there still are, and we are looking at opportunities to use third party networks as well. It's a commitment that we've jointly made to look at, so labs on the east coast or the west coast.

**Mr. Churence Rogers:** Okay.

Again, DFO explains that it applies the precautionary principle within its overall decision-making approach as it pertains to aquaculture. Can you give me a concrete example of the application of this principle pertaining to DFO aquaculture decision-making?

• (1610)

**Mr. John Campbell:** Yes. In terms of precaution, a concrete example would be around siting. That's one of the things we take into account where we're determining whether or not where to put a site. We have to look at the water flow rates, the type of climate that we're in....

**Mr. Churence Rogers:** Are these some of the other factors that are considered?

**Mr. John Campbell:** A number of factors are taken on board when you're determining precaution.

**Mr. Churence Rogers:** Mr. Chair, a lot of times when I read these reports and listen to people present and talk to industry people, I'm left with more questions than answers.

I'd like to move a motion, Mr. Chair:

That the Committee study Atlantic Canada's Aquaculture industry with a focus on industrial best practices from Canada and around the world looking at countries including, but not limited to, Norway, Chile, U.S.A., and Scotland and that the Chair shall be empowered to coordinate the necessary witnesses and schedule.

**The Chair:** Copies have been distributed so everybody can see the content of the motion.

Do I hear any debate?

Mr. Arnold.

**Mr. Mel Arnold:** I was wondering if the member would be open to having this include all of Canada's aquaculture industry. We certainly have concerns on both coasts.

**Mr. Churence Rogers:** I anticipated that question; however, I feel that we need to focus on the Atlantic region because it's very different from what happens in western Canada, number one.

Number two, the people from Norway are doing a major aquaculture development in my riding, as we speak. It's in no way bringing its best practices and the fundamentals of the running of the industry. They've done it right, I guess, and they've grown a major industry. I'm thinking that if we were to do some kind of jurisdictional scan to find out what the best practices are, and if we learn from that exercise, perhaps the same practices could be

applied in Atlantic Canada, and of course finally, with western Canada as well.

I think rather than a large scope for the study, I'd prefer we stick with doing the Atlantic region at this stage.

**The Chair:** Mr. Calkins.

**Mr. Blaine Calkins (Red Deer—Lacombe, CPC):** Chair, I have a question for my colleague who moved the motion. I noticed there isn't a specific request for travel, but would travel be something that is or should be anticipated by the committee should this motion come into effect?

Chair, I would like to know when you lost the power to coordinate the necessary witnesses and schedules.

**The Chair:** I didn't think I had.

**Mr. Churence Rogers:** I guess we would travel, if necessary. That's not for me to decide. The committee should decide. Certainly there are ways and means of doing a study without necessarily travelling. If the committee desires it, then yes.

**The Chair:** Mr. Donnelly.

**Mr. Fin Donnelly:** Mr. Chair, while I obviously support this, I would also encourage the committee to consider that it apply to both coasts, but it sounds as if Mr. Rogers is going to keep it limited to the Atlantic coast. In that case, I have a question about timing.

Would you be open to putting the word "immediately" in front of the word "study"?

I say that because we're running out of time before the next election.

**Mr. Churence Rogers:** I realize, Mr. Donnelly, that might be an issue. I didn't particularly give that a lot of attention. I wanted to get it on the table so it's on the docket for the committee to consider as part of our work term from January to when the House rises at the end of the spring session, or in June, whenever we finish.

**Mr. Fin Donnelly:** Mr. Chair, this is just to follow up.

I think you're agreeing that it's a time-sensitive issue and that you want to get it in before June. That's what I was trying to get to, if there's some wording that you could submit or suggest, I would use the wording "immediately" or "as soon as possible" or "before we rise", something that gives the time frame.

• (1615)

**Mr. Churence Rogers:** I have no issue with inserting the word "immediately".

I was just thinking from the point of view that some studies are already proposed. I guess we as a committee could prioritize.

I'll leave it to the discretion of the chair at this point.

**The Chair:** Hearing no further discussion, all those in favour?

**Mr. Mel Arnold:** The word "immediately" isn't in there?

**The Chair:** If he leaves it to my discretion, yes, I'll put in "immediately".

**An hon. member:** That's—

**The Chair:** That's what he asked. The member asked me.

**Mr. Mel Arnold:** So this is—

**Mr. Pat Finnigan (Miramichi—Grand Lake, Lib.):** Can we have just two minutes?

**Mr. Mel Arnold:** Mr. Chair, we have important testimony happening here.

**The Chair:** I know that.

**Mr. Mel Arnold:** This is something that should be discussed with the subcommittee, with more information in terms of the timing of the study.

**The Chair:** Mr. Arnold, as you know, if it's related to a discussion that's taking place, a motion can be moved at that point.

**Mr. Mel Arnold:** That's right.

**The Chair:** People have done it in the past, and it's now being done today.

Mr. Donnelly.

**Mr. Fin Donnelly:** Mr. Chair, I think we're on the same page, but I would like to make a formal amendment. I'm happy to make a motion to insert the word “immediately” before “study”, if there is agreement to that.

**The Chair:** So moved.

Mr. Fraser.

**Mr. Colin Fraser:** My understanding is that the committee will be meeting shortly, within the next week or so, in camera to discuss the business of the committee and the plan going forward. I think we should vote on the motion as is today, and then determine at that subsequent in camera meeting, which we'll be having shortly, the order of business going forward.

**Mr. Churence Rogers:** That's good for me, Mr. Chair.

**The Chair:** Mr. Arnold.

**Mr. Mel Arnold:** I'd like to draw the committee's attention to an aquaculture science report that is due from the chief science adviser. It was actually due on September 1. It's overdue. It may have influence on this as well, so rather than saying “immediately”, I believe we should hold off and leave the motion as is.

**The Chair:** We do have an amendment. Hearing no further discussion, we'll vote on the amendment.

(Amendment negated [*See Minutes of Proceedings*])

**The Chair:** Now we'll vote on the motion.

(Motion agreed to)

**The Chair:** The next questioner, for the Conservative side, is Mr. Calkins, for five minutes or less, sir.

**Mr. Blaine Calkins:** Thank you, Chair. I promise not to move a motion.

**The Chair:** Thank you.

**Mr. Blaine Calkins:** To the officials, I really do appreciate what you've had to say. Could let the committee know, quickly if you can, when it comes to gaps in the science that you feel you might have, what those gaps might actually be when it comes to aquaculture? Could you identify those in 45 seconds or less?

**Mr. Wayne Moore:** Scientists don't do much in 45 seconds or less

—

**Voices:** Oh, oh!

**Mr. Wayne Moore:** —but I will suggest that two important areas have been identified during the course of our work over a number of years: interactions with the environment, as well as disease issues. Those are all interactions between wild fish and aquaculture. We've invested a lot of new money, time and energy in that, including the risk assessments that we just spoke about.

Another area is genetic interactions. We've invested a significant number of resources there as well.

An area that continues to raise questions, and which we're working to fit in, is that of climate change and how that's changing our understanding of relationships with regard to aquaculture and and with regard to wild shellfish, as well as the interactions between the two. I'd leave it at that.

**Mr. Blaine Calkins:** That's fine.

Could you update this committee? My understanding is that the net-pen locations, particularly on the west coast, have a lease or an agreement to stay in a certain spot for a certain period of time. When do those agreements come up for renewal, expiry or discussion?

• (1620)

**Mr. Andrew Thomson:** I'll answer that question.

Under the provincial legislation, they have a lease for the seabed that they're anchored to. Each of those leases is variable in length of time and expiration date based on when they were applied for and how long they were granted for. A number of the sites in the Broughton Archipelago have lease expiration dates in the next year or have already expired and are into a month-to-month renewal of the lease. Again, this is provincial legislation about the land lease of the seabed.

**Mr. Blaine Calkins:** Thank you very much.

Can you confirm how much, if any, acoustic telemetry the department uses in its scientific monitoring of the wild stocks' movements in and around the net pens?

**Mr. Wayne Moore:** I don't know, Andy, if you want to add something to your...

**Mr. Andrew Thomson:** I'll just pass on knowledge that there have been a series of experiments conducted, in which acoustic tags were used to track salmon as they swam near net pens, or through areas of the B.C. coast. They were conducted through a series of research programs, both by departmental officials and by external scientists.

**Mr. Blaine Calkins:** The current biomass of farm-raised salmon in the net-pen configurations on the Pacific coast.... If they were to be replaced with biomass from the wild stocks, what would that look like from a fisheries management perspective?

**Mr. Andrew Thomson:** That's a good question.

There are about 90,000 tonnes of salmon produced annually in British Columbia, or approximately that. I'd have to do the math to convert it, but I can give you an example from the real world that I use. There's one processing plant in Port Hardy that processes over a million pounds of Atlantic salmon a week. That would certainly be far more than the current Pacific fisheries can manage on a year-round basis.

**Mr. Blaine Calkins:** Thank you very much.

If I have any time left, Mr. Arnold can have it.

**The Chair:** You have one minute.

**Mr. Mel Arnold:** Thank you.

Dr. Greenwood, you started to explain that there is a decision-making process for which diseases will be addressed. Can you explain how that works, or has that been sorted out between the two departments? How do you decide which is a disease you want to pursue or investigate and which isn't?

**Dr. Penny Greenwood:** I would like to clarify that before, I was talking about the policy for emerging diseases. In the scientific world, "emerging disease" means something extremely specific. It means a disease that is new to the scientific community or to the world at large, or a disease that has been known before but has changed radically in its characteristics or behaviour. We were only talking about emerging diseases as far as this policy goes, and that came forward from the recommendation of the audit.

With regard to the other diseases, one of our primary sources, or things we look at to decide about importance, is the World Organisation for Animal Health's list of diseases. That organization looks at all diseases, terrestrial and aquatic, that pose a threat to international trade. They are suggesting, as a world scientific body, that if you introduce them into your country, you will have a difficulty in controlling or eradicating them in the future. CFIA looks at the OIE lists very carefully.

We also weigh consultation with the industry, the provinces and indigenous peoples, and we undertook that to a great extent during the development of the NAAHP. We did extensive consultations on a full list of diseases, and asked, "Which would you like to see the federal government control, because you think that they're significant to the industry or to the country, and that they can be controlled in a manner that would be effective?"

Those are the two major parameters that we use.

**The Chair:** Thank you, Mr. Arnold.

We'll go back to the government side now, and Mr. Fraser, for five minutes or less, please.

**Mr. Colin Fraser:** Thank you, Mr. Chair.

I'll share a bit of my time at the beginning with Mr. Casey.

• (1625)

**Mr. Sean Casey (Charlottetown, Lib.):** I have two questions, and the first is for you, Mr. Thomson.

When Mr. Donnelly was asking about the importation of diseased eggs, it seemed you were trying to get his attention to supplement your answer and you didn't, so this is your chance. Do you have anything else you want to add on that?

**Mr. Andrew Thomson:** Yes, thank you very much, sir.

Now I have a better understanding of the question Mr. Donnelly was asking. There has been in place for a long period of time controls over the importation of eggs. Prior to the amendment of the Health of Animals Act to include aquatic animals, there was previously the fish health protection regulations administered by the Department of Fisheries and Oceans. Under those previous regulations, there were also requirements to ensure that eggs imported into British Columbia, and into Canada at that point, came from a quarantine facility, were surface disinfected en route and then went into another quarantine facility. There have been in place for a long period of time fairly significant controls on the importation of any salmon eggs or other eggs into British Columbia.

As for how many particular importations have taken place in the last few years, I don't have that data in front of me, but I know it's a very small number, if not zero. I'm happy to provide that data as soon as possible to the committee.

**Mr. Sean Casey:** Thank you.

My next question arises out of Mr. Hardie's line of questioning with respect to the Broughton Archipelago. I know that the minister recently made an announcement with respect to the adoption of area-based management plans. Could someone explain what they are and how they fit into the question that Mr. Hardie raised?

**Mr. Andrew Thomson:** Minister Wilkinson recently announced the adoption of an area-based management approach for aquaculture. That would include development of a greater understanding of the concerns of the local indigenous groups in the particular area: Are there factors in a particular area where aquaculture operates, in a fairly large geographic zone of British Columbia? We haven't determined the exact zonation of it. Are there factors in that particular zone that require greater monitoring of changes in the way the operations are licensed and controlled, changes in the way the importation of fish into those sites takes place or changes in the way the harvest takes place? What activities of the particular sites of that area that should be modified from an overall regional perspective into a more specific area-based perspective based on the biophysical factors in that particular area and based on the inputs or engagement with the indigenous groups of that area?

**Mr. Colin Fraser:** Thank you very much.

I'm going to ask DFO a question on enforcement. I understand that when the aquaculture regulations came out in 2015, no additional enforcement officers were hired to deal with that. I'd imagine that it has taken some work for them to figure out how to best handle enforcement issues dealing with aquaculture, with all the other things they've been dealing with on the ground.

Can you explain the rationale for not needing more enforcement? Do you think it's working well with bringing those regulations into force and not hiring more enforcement officers?

**Mr. John Campbell:** At the time the AAR, aquaculture activity regulations, were introduced in 2015, we had been working for a number of years with Environment Canada and looking at their numbers on how they were doing their enforcement techniques, along with inspections and audits. We determined at the time, with the help of Environment Canada, that there was actually a low number of enforcement violations. In working with our conservation and protection team, we came to the conclusion that internally we could manage in the first year and then come back in the next year or two and do a review and see where we could get to.

Conservation and protection has done that review, and now we're internally discussing how we can manage that and what else would be required as this goes forward.

The aquaculture activity regulations were the first regulations in Canada that were national in approach. Obviously, some learning comes along with new national regulations. The department certainly welcomed bringing them on, and we'll welcome changes as we move forward.

● (1630)

**Mr. Colin Fraser:** Thank you.

**The Chair:** Your time is up and we are back to the Conservative side with Mr. Arnold for five minutes or less, please.

**Mr. Mel Arnold:** Thank you, Mr. Chair.

Earlier in your presentation you described how some provinces have taken on the management of aquaculture. In other areas of the country it's still under federal jurisdiction. Can you explain why there are differences? Do your agencies still have overarching authority over those provinces that have taken on that management?

**Mr. Philippe Morel:** Aquaculture is a joint jurisdiction, but the B.C. Supreme Court decision in 2010 said that aquaculture is fisheries, so it's managed under the Fisheries Act. Because it's the B.C. Supreme Court, that decision does not have any impact on other provinces where the previous jurisdiction split exists. Before that, aquaculture in B.C. was managed the same way as in other provinces.

The only difference is in P.E.I., where we have an agreement with the Province of P.E.I. to co-manage aquaculture in the province. In all other provinces, it's a shared jurisdiction. We only have partial jurisdiction, mainly on the transfer of fish from the hatchery to the pens.

**Mr. Mel Arnold:** So you're saying that a provincial court decision has been made but that there was no federal opposition, or—

**Mr. Philippe Morel:** There was no appeal of the decision, so the decision didn't go to the B.C. Court of Appeal, and it didn't go to the Supreme Court, so it has no legislative impact on other provinces.

**Mr. Mel Arnold:** Thank you.

Do your agencies work closely with the Province of B.C.'s animal health centre? I believe it's in Surrey or in the Abbotsford area.

**Mr. Andrew Thomson:** It's in Abbotsford.

**Mr. Philippe Morel:** I think Mr. Thomson probably has more detail than I do on that.

**Mr. Andrew Thomson:** Yes, we do have a collaborative arrangement with the B.C. animal health centre in Abbotsford, which is a certified lab for disease analysis. We actually have a contract in place in which that lab performs pathology analysis on samples that we collect under our regulatory program.

**Mr. Mel Arnold:** Thank you.

Recently, aquaculture companies have started using alternative methods of managing sea lice and so on. How effective are these new methods? Have you been able to monitor that? Are they an improvement?

**Mr. Wayne Moore:** Thank you very much to the member for the question, via you, Mr. Chair.

Certainly, there's a growing interest in alternative technologies in terms of this. We've been doing a lot of research in this area, and there are a number of them that are looking promising, such as using fish that will actually eat sea lice—very strange—as well as the washes that were referred to in the media earlier this month, I think, using warm water. Our research has shown that these are promising. I think we'll need to look at more active monitoring in situ over time, to see how well they are paying off.

The only point I would add to that is that ultimately, as in the area of agriculture—and I think those members not from the coast will know this—it takes a broad and fully integrated approach to pest management, not just a single tool. I think these alternative technologies are useful tools in the tool kit.

**Mr. Mel Arnold:** Thank you.

In the commissioner's audit, there was mention of a “traffic light decision tree” as a tool to help address the potential cumulative effects on wild fish. How far along is the development of that process?

**Mr. Philippe Morel:** We are finalizing the development of that. The traffic light is to identify sites. When it's red, deposits should no longer be allowed. When it's green, it's authorized. When it's yellow, we should be more careful.

Now we are consulting with partners and stakeholders on that, with provinces, to see about our approach. We should be finalizing this process within the next six to eight months, I'm told, and implementing it on all coasts.

● (1635)

**Mr. Mel Arnold:** So it's well under way.

**Mr. Philippe Morel:** Yes, it's well under way, and we will be on track, as mentioned in the commissioner's report.

**The Chair:** Thank you, Mr. Arnold.

We'll now go to the government side and Mr. Finnigan, for five minutes or less, please.

**Mr. Pat Finnigan:** Thank you, Mr. Chair, and thank you to the group for being here today to answer some questions.

I might be going a little bit outside the real study, but it's still pertinent to what we're doing here.

I'm the chair of the ag committee, and roughly two years ago, we looked at the first time that GMO salmon was going to be farmed. I guess it was just the production of the eggs. I believe this was on Prince Edward Island, to be shipped to Panama. From there, it would be farmed and then shipped back to Canada as a product.

I haven't heard anything back. Could you let us know how that project is working and whether there's any plan of expanding it? In other words, is there any plan for some of the aquaculture to be used for GMO salmon? Could you expand on that?

**Mr. Wayne Moore:** Thank you very much for the question.

As you correctly pointed out, there was a proposal, which was approved by the Minister of Environment and Climate Change, to allow for the production of eggs on the west coast—

**Mr. Pat Finnigan:** Is it on the west coast or on the east coast?

**Mr. Wayne Moore:** Oh, sorry, it's on the east coast, in Prince Edward Island.

Well, I'm a Newfoundlander, so it's west of me.

**Voices:** Oh, oh!

**Mr. Robert Morrissey (Egmont, Lib.):** Pretty sharp. That's a fair point.

**Mr. Wayne Moore:** Having said that—

**Mr. Blaine Calkins:** That was my reaction when Saskatchewan played Winnipeg in the Grey Cup. It was just a bunch of easterners.

**Voices:** Oh, oh!

**Mr. Wayne Moore:** The proposal in question had undergone a substantial risk assessment by officials and scientists from Fisheries and Oceans Canada. Subsequently, the company in question has come back and asked for an additional approval to have a facility in the area for production of fish, of genetically modified AquAdvantage salmon.

That proposal has been publicly notified, so we've been seeing a broad spectrum of Canadians commenting on that. That proposal will also undergo a thorough, rigorous review by Fisheries and Oceans Canada and Health Canada to inform a decision by the Minister of Environment sometime in the coming months.

**Mr. Pat Finnigan:** In a follow-up to that question, in 2005, the audit mentioned that 40,000 fish escaped from Atlantic aquaculture pens.

In your view, is there any chance of contamination or even crossbreeding of those fish or any other fish? The stock of Atlantic salmon, especially in the Miramichi where I come from, is still a pure stock, if you can call it that—original stock.

What are the chances of those escapees meeting up along the migration route? I just want to see what the chance of either disease or cross....

**Mr. Wayne Moore:** Thank you to the member for his question.

Certainly, we've seen in the past globally that there have been documented instances of interbreeding or genetic introgression between wild and farmed salmon. We've also seen in Canada instances where this has happened in the context of escape events. I'd

say one of our biggest research programs right now is looking into this area of how this interacts.

One other point that I would note is that since the escape event on the south coast of Newfoundland, which you were referring to, I believe—

**Mr. Pat Finnigan:** I didn't know where it was.

**Mr. Wayne Moore:** It's very close to your colleague's riding.

We have noticed that hybridization that we've seen has gone down over time. This isn't conclusive, because we look at the balance of evidence over time, but it's suggesting that the effects of that are being minimized.

I would also note that one of the recommendations that the commissioner for the environment and sustainable development spoke to was working with the provinces to look at the maintenance and quality of equipment around escapes. That is work that's under way, and my colleagues maybe can speak more to that.

Thank you.

• (1640)

**The Chair:** Thank you, Mr. Finnigan.

We will now go to Mr. Donnelly, for three minutes or less, please.

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

To follow up on the commissioner's recommendation 1.28, which is the one on DFO conducting its planned disease risk assessments by 2020, I have information that DFO will deliver the disease risk assessment as planned.

There are a couple of the actions that I want to talk about.

In April 2018, there was a workshop to discuss the assessments of four diseases related to bacterial pathogens that cause systemic infections. The working papers for the peer-reviewed process have been completed.

Is this information available online?

**Mr. Wayne Moore:** This information will be available online shortly.

The participants have met—

**Mr. Fin Donnelly:** When you say shortly, is that by the end of the year?

**Mr. Wayne Moore:** Yes.

We're just going through final approvals and translation. I'm hoping it will be available before Christmas so I don't have to make my staff work too long.

**Mr. Fin Donnelly:** Okay, thanks.

Is there a terms of reference for the steering committee that's been struck and is that available online?

**Mr. Wayne Moore:** The terms of reference for the steering committee for the four diseases related to bacterial pathogens will be online. The one for idiopathic heart disease related to PRV and HSMI will be coming online. It's in the process of approval. Once it's translated, it will be posted.

**Mr. Fin Donnelly:** Is that the fifth one, or is that one of the four?

**Mr. Wayne Moore:** That will be the sixth one.

**Mr. Fin Donnelly:** It's the sixth one, okay.

**Mr. Wayne Moore:** For the first one, on IHNB, all the papers, the risk assessment and the terms of reference are posted. For the next four, the terms of reference are up and the papers are in the process of being finalized, approved and translated. I'm hoping they'll be up before Christmas, so I don't ruin anyone's holiday. The terms of reference for the sixth one are just being finalized. When it's translated, it should be up shortly as well.

**Mr. Fin Donnelly:** That's great. Thank you.

I guess it depends what they say in terms of ruining somebody's Christmas. That is my next question. The results, the risk assessments.... I guess you can't say anything until they're publicly available.

**Mr. Wayne Moore:** I can't speak to numbers two through five, because as you point out, they're not yet publicly available, and I don't want to prejudge the scientists reaching their final conclusions and finessing it.

I will say on the first one.... To recall, the first 10 were picked up because of diseases we spotted on farm. The first one determined a minimal risk to wild salmon as a result. That was a function of practices that companies had put in place on farm to mitigate risk associated with the disease.

**Mr. Fin Donnelly:** Thanks.

The department has developed a draft framework for aquaculture risk management. Is that framework available, or can it be forwarded to this committee?

**Mr. John Campbell:** It's not quite finished. We're hoping to have that in public for consultation either before Christmas or very soon in the new year.

**Mr. Fin Donnelly:** Can it come to the committee?

**Mr. John Campbell:** Yes, certainly.

**Mr. Fin Donnelly:** Thank you.

Thanks, Mr. Chair.

**The Chair:** Thank you, Mr. Donnelly.

We'll close this portion of the meeting now, so we can move into committee business.

I want to say a special thank you to our guests for appearing in person today, and to Mr. Thomson for appearing by video conference.

We'll suspend for a minute or two while we prepare to go in camera.

*[Proceedings continue in camera]*

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