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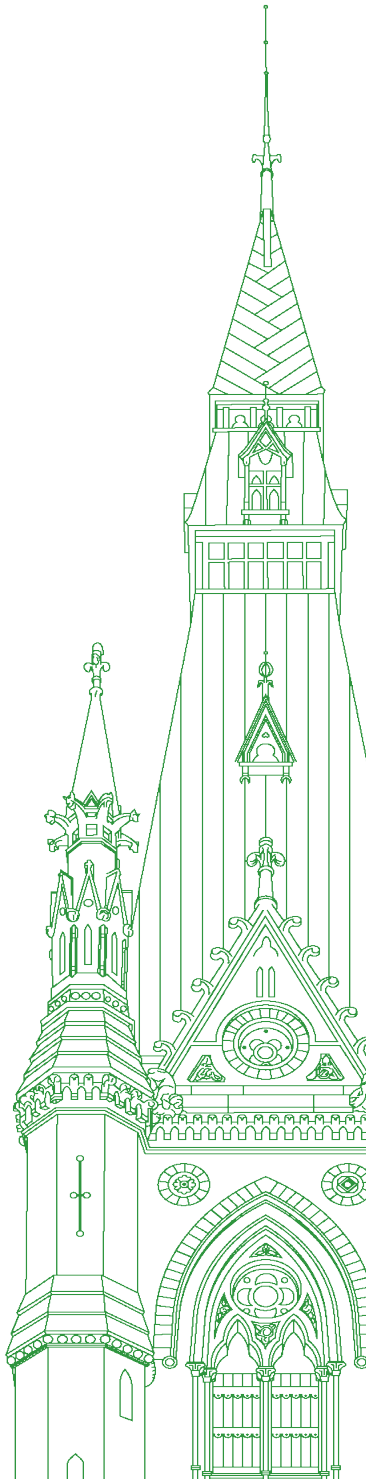

Chair: Mr. Ken McDonald

Standing Committee on Fisheries and Oceans

Wednesday, May 12, 2021

● (1645)

[*English*]

The Chair (Mr. Ken McDonald (Avalon, Lib.)): I call this meeting to order. Welcome to meeting number 31 of the House of Commons Standing Committee on Fisheries and Oceans.

Pursuant to Standing Order 108(2) and the motions adopted on October 19, 2020 and April 21, 2021, the committee is meeting for its study of the state of Pacific salmon.

I have set aside some time at the end of today's meeting for drafting instructions; therefore, we will move in camera for the latter part of today's meeting. That will take us about 15 minutes. I will let members know when our time for questions for our witnesses has expired.

Today's meeting, of course, is taking place in a hybrid format. I don't think anyone is coming to us from the room, so I won't continue on with too much of that.

So you are aware, the webcast will always show the person speaking rather than the entirety of the committee.

For those participating virtually, I would like to outline a few rules to follow.

Members and witnesses may speak in the official language of their choice. Interpretation services are available for this meeting. You have the choice, at the bottom of your screen, of “floor”, “English” or “French”. With the latest Zoom version, you may now speak in the language of your choice without needing to select the corresponding language channel. You will also notice that the platform's raised hand feature is now in a more easily accessible location on the main toolbar, should you wish to speak or to alert the chair.

There are no members participating in person, so I won't go through that.

I would now like to welcome our witnesses for today.

We have, as an individual, Mr. Anthony Farrell, professor, tier one Canada research chair in fish physiology, conservation and culture, University of British Columbia. From the Fédération québécoise pour le saumon atlantique, we have Myriam Bergeron, director general. From the Tlowitsis First Nation, we have Chief John Smith.

Mr. Smith, I know they had some difficulty with your sound check, so I would remind you to please speak slowly and clearly.

If you want to alert the chair, use the raised hand feature. When you're not speaking, please leave your mute button lit up.

We'll now proceed with opening remarks from Mr. Farrell, for five minutes or less, please.

Mr. Anthony Farrell (Professor, Tier I Canada Research Chair in Fish Physiology, Conservation & Culture, University of British Columbia, As an Individual): Thank you for the invitation to speak today. As already noted, I'm a professor in land and food systems in the department of zoology at UBC. I hold a Canada research chair tier one in fish physiology, culture and conservation. I'm a fellow of the Royal Society of Canada, and a fellow of the Canadian Geographical Society. I obtained my Ph.D. in zoology at UBC many years ago. I've held academic positions previously at biology departments at the University of New Brunswick and Mount Allison University in New Brunswick, and Simon Fraser University in British Columbia.

In almost a 50-year research career, I've focused predominantly on the physiology of a crucial life support system in fishes, which is their cardio-respiratory system. I work predominantly with B.C. salmonids, but I have researched fish on every continent, including Antarctica, studying over 100 different fish species. I've published over 470 peer-reviewed journal publications, 31 co-edited book volumes, and a three-volume encyclopedia of fish physiology.

My research collaborations are wide in B.C. They have included Fisheries and Oceans Canada, the Pacific Salmon Commission, the Pacific Salmon Foundation, Go Fish BC, commercial fishers, first nations and industry. Among my publications, about 140 of them deal broadly with the conservation physiology of salmon, which is a passion for me. About 50 of the publications deal with assessing sublethal consequences of infections, diseases and toxicants. I was the expert who would have investigated the consequences to salmon of experimental pathogen infections for the strategic salmon health initiative led by Dr. Miller-Saunders and Dr. Riddell. In fact, I've co-authored 21 publications with Dr. Miller-Saunders.

In terms of aquaculture, I was a member of the Honourable John Fraser's B.C. Pacific Salmon Forum. Also, I was a member of Dr. Mona Nemer's Independent Expert Panel on Aquaculture Science, which reported to DFO.

At the request of the provincial Minister of the Environment I was commissioned to review the 2019 Newfoundland and Labrador south coast mortality event of cultured Atlantic salmon. That was authored by Burke, Gardner and Farrell.

Thus, beyond basic science discovery, I seek direct application of my research and knowledge to issues such as salmon conservation; assessing sublethal consequences of infections, diseases and toxicants to salmon; and also sustainable salmonid aquaculture.

If you're interested, I have three messages that I will happily expand on, as time allows.

My first is a comment. I believe, having watched earlier versions of these meetings, that crucial peer-reviewed literature, that which is relevant to wild salmon management because it has investigated the actual impacts to salmon of deliberate disease infections, is being ignored by certain communications to this committee.

The second one is a recommendation of sorts to DFO. DFO needs to make its information and data pertaining to both aquaculture and to wild salmon more readily available, and in that I mean more user-friendly, which is the case in Norway.

My third and last point is that aquaculture decision-making must become more locally based, particularly in B.C. It needs to be evenly applied from coast to coast to coast. To do so, DFO will need to devolve some of its regulatory powers to the local peoples, as is the case in Norway.

Thank you very much.

● (1650)

The Chair: Thank you for that.

We'll now go to Chief John Smith for five minutes or less, please.

Chief John M. Smith (Tlowitsis First Nation): Good afternoon, everybody. I'm Chief John Smith of the Tlowitisis First Nation.

I was born in a fishing community, and in my lifetime I have seen two major fisheries that are no longer fisheries, Rivers Inlet and Knight Inlet, which were major fisheries for our people of the village. Every one of the men there had a gillnet boat. That's how they made their living. Then we all moved away from our village. There was a diaspora that took place, and it ended in about 1970. We haven't had a village since then, so we've now bought a piece of land in Campbell River. It's being turned into a reserve by the government. We're trying to build a new community.

To raise income, we've become part of the fish farm industry. We didn't just come right into it. I didn't support it at first, until I did some studies and talked to some very smart people, and we made a relationship with Grieg Seafood. They are only there because they respect our title and they treat our people with a respect that I've never seen before, as the Norwegians have treated me since I met them before we had fish farms.

Now we're fairly well invested. We're not on any sockeye routes with our farms. We have three farms, and we're looking for another one or two more. That would be very nice.

Our fish aren't very good killers, because the farms in the archipelago have been there for over 30 years and they haven't done the good job that they keep saying they've been doing. I'm not sold that the farmed fish are that much of a harmful thing to the wild stocks. We haven't noticed it in our area either.

I think that people have to give it a thought. We haven't had farmed food fish from the Fraser stocks either for two years, and we're going to have to rely on something, but if they keep closing our farms, where's the fish going to come from?

A lot of people like to eat fish. I'm not one of those people who likes to cut off my nose to spite my face. We have to learn to accept changes in things because the footprint that farming fish leaves is very small, smaller than raising chickens. I hope that people will start to realize that you can't just keep blaming something and not understand what we're faced with.

We have a big bunch of other fish to fry. The seal populations are just ridiculous. The sea lion populations are just ridiculous. We don't know how far global warming is going to go on its destructive path.

I'm sure we all want to have everything the same, but it can't be that way. I have to let you know, however, that if you eat sushi and you eat salmon in Ottawa, where some of you people are, it will be farmed fish. There's a restaurant I go to once in a while. Apparently Mr. Trudeau goes there too, so he's been eating farmed fish if he's been eating salmon.

● (1655)

The Chair: Thank you, Chief Smith.

We'll now go to Madam Bergeron for five minutes or less, please.

[*Translation*]

Ms. Myriam Bergeron (Director General, Fédération québécoise pour le saumon atlantique): Good afternoon to the members of the committee. Thank you for having invited me.

My name is Myriam Bergeron, and I'm a biologist and the director general of the Fédération québécoise pour le saumon atlantique, the FQSA, which represents fishers and managers of salmon rivers in Quebec, and to which management is delegated by the provincial government. We also take part in national and international conservation and promotional efforts on behalf of Atlantic salmon.

The main reason for my presence here today is our expertise in salmon management. The rigorous approach of Quebec's internationally recognized model for Atlantic salmon management allows for river-by-river detailed management of the salmon resource. At this level of management we can adjust our fishing activities and limits on the basis of resource variability, in collaboration with the provincial government, first nations and local management organizations.

The scientific models for setting target conservation thresholds for runs are complex, and annual monitoring is carried out on many rivers. In fact, the runs are counted on approximately 40 rivers each year, in addition to sampling and measurements of individuals, which are used to calculate the number of salmon required for the fall spawn. Fishers are also required to declare their catches, which allows us to track things effectively.

Catch-and-release sport fishing is becoming increasingly popular. Thanks to substantial awareness investments, we have thoroughly educated our community of fishers on best practices. Thus 90% of releases are being declared with an observed survival rate of 97%. In 2020, 69% of catches were released and we observed a 19% increase in total runs compared to the average for the past five years. Rapidly growing interest in sport fishing has also led to significant economic benefits in the regions.

I'd like to take advantage of this opportunity to mention that the addition of Atlantic salmon to the endangered species list, which is currently being studied by the Committee on the Status of Endangered Wildlife in Canada, the COSEWIC, and by the Department of Fisheries and Oceans, would threaten the work being done by this network on the management and monitoring of salmon populations. Wildlife management performance requires the involvement of fishers, the salmon river management organizations, and the provincial and federal governments. Indeed, the presence of fishers generates significant revenue that is directly reinvested in resource conservation and monitoring. Correlating the promotion of sport fishing with conservation activities is clearly useful. Adding salmon to the endangered species list will not necessarily work for salmon.

The FQSA recommends the development of integrated management for Atlantic salmon, as is the case for the different species of Pacific salmon, because the threats are interrelated, not only for conservation, but also the sustainable development of these fisheries. These include environmental issues, climate change and aquaculture, as you were discussing earlier.

It's essential to pull together and work with the various levels of government to design flexible management frameworks suited to regional realities by applying the principles of subsidiarity and sustainable development. Even though Atlantic salmon populations have stabilized, it's important to take action now by investing in effective management methods, as was the case for Pacific salmon species.

Thank you once again for having invited me to appear this afternoon. I'd be happy to answer any questions you might have.

● (1700)

[*English*]

The Chair: Thank you.

There was a little bit of time saved there. We appreciate that.

[*Translation*]

Ms. Myriam Bergeron: Yes.

[*English*]

The Chair: We'll now go to questions.

We'll go to Mr. Arnold first, for six minutes or less, please.

Mr. Mel Arnold (North Okanagan—Shuswap, CPC): Thank you, Mr. Chair.

I thank all of the witnesses for being here today for this study.

Mr. Farrell, I want to start with you. I have a series of questions I'd like to go through, so please keep the answers brief. If you have anything further to provide on these questions, perhaps we can get it in writing afterwards or at another time.

You've undertaken work to examine the relationship between PRV and HSMI. I'm aware that researchers in one part of the world keep abreast of the work of other researchers elsewhere in the world. They're examining similar or scientific questions.

Is it correct that you keep abreast of what's happening elsewhere in the world?

Mr. Anthony Farrell: Yes. I try my best to do that.

Mr. Mel Arnold: Thank you.

Have researchers in Norway established a cause-and-effect relationship between PRV and HSMI?

Mr. Anthony Farrell: They have for the Norwegian strain of PRV, which is different from the British Columbia strain. I think everybody is now acutely aware that different strains of viruses exist worldwide for COVID, and they do for PRV, too.

Mr. Mel Arnold: Are you aware of any challenge studies of the PRV in Norway that resulted in the death of experimental animals or fish?

Mr. Anthony Farrell: No, I can't speak to that.

Mr. Mel Arnold: Do you know if the laboratory challenge studies in Norway demonstrated that PRV infection impacted the swim performance in fish?

Mr. Anthony Farrell: To my knowledge, nobody has ever tested the swim performance in Norway of a deliberate PRV infection. I don't think anybody has actually tested the swim performance.

Mr. Mel Arnold: Has any of your research also subjected PRV-infected fish to the swim test? I think you just said you're not aware of any, but is that correct?

Mr. Anthony Farrell: The first thing is that all the questions you've asked me previously were to do with the Norwegian strain of PRV and Norwegian strains of Atlantic salmon. Now we're switching over to tests that I've done with the B.C. strain of PRV and both juvenile Atlantic salmon and juvenile sockeye salmon.

In those tests, we infect them and then we follow them for many weeks post-infection. As part of the testing, we chase the fish to exhaustion. This would take a period of 10 minutes. If any of the committee members were to do a stress challenge test in a cardiologist's lab, you'd jump on a treadmill and my guess is you'd probably last no more than six minutes before you'd have to tell the guy to stop increasing the plane.

Yes, we stress the fish and we challenge its cardio-respiratory system, but we do not do the classic swim test that Dr. Roly Brett pioneered for swimming salmon in treadmills and that we've used for many other things.

● (1705)

Mr. Mel Arnold: Would you expect an impact on the physiological performance or survival in B.C., in order to demonstrate impacts of the disease that the Norwegians have not been able to demonstrate in the lab in Norway? Would you expect you'd be able to quantitate that experience here?

Mr. Anthony Farrell: I'm sorry. I don't follow that question.

Mr. Mel Arnold: I'll move on.

Do you expect that all diseases should result in a reduction of swim performance, and if so, is it routine to demonstrate the impacts on swim performance to establish a cause-and-effect relationship with the disease?

Mr. Anthony Farrell: You can measure any physiological performance you want, but if you have a virus that targets red blood cells and targets the heart and targets the skeletal muscle, a simple hypothesis is that swim performance would be challenged. A simple test would be that they wouldn't be able to get to a maximum oxygen consumption. Those are the sorts of things that we do.

It's a line of least resistance. We could go and investigate PRV until the cows come home and I'd be long retired by then.

Mr. Mel Arnold: I have one final quick question.

I believe you referred to that you would have been involved with part of the strategic salmon health initiative. Was that the next phase, phase three, that hasn't moved forward? Is that what you were referring to?

Mr. Anthony Farrell: No. I think Dr. Miller-Saunders and I have moved in different directions. Having listened to your questions to her a few weeks ago, I would say that she did not take any account of the information that has been generated in the same building as her with deliberate infections of PRV.

Mr. Mel Arnold: Is that what you referred to when you said you believe some of the peer-reviewed info is being ignored?

Mr. Anthony Farrell: You're absolutely correct in that.

Mr. Mel Arnold: Can you elaborate a little further on that?

Mr. Anthony Farrell: I think there are two studies, one with Atlantic salmon and one with sockeye salmon, that were done in collaboration with the virologists. In neither of those studies, which followed the progression of PRV, that it was there in the fish for up to 21 weeks, could we find any sustained or major change in their cardio-respiratory performance. You have the disease, you're a carrier, but as best as we could test, and I think the test was as comprehensive as can be done and that have been done anywhere in the world, we are not seeing major changes or sustained changes from these viral infections. I think there are only three such tests that have been done and two of them are from our labs.

The Chair: Thank you, Mr. Arnold.

We'll now go to Mr. Hardie for six minutes or less, please.

Mr. Ken Hardie (Fleetwood—Port Kells, Lib.): Thank you, Mr. Chair, and thank you to our witnesses who are our guests today.

I'll start with you, Chief Smith.

You support finfish aquaculture in your area. What was or is the state of wild salmon runs in your territory?

Chief John M. Smith: We don't have huge runs of wild salmon. We have some small fish-bearing streams. We depended on Knight Inlet, which was a fairly substantial run and of course, Johnstone Strait, where the Fraser River stocks went through.

It's never been a big thing right where our community is.

● (1710)

Mr. Ken Hardie: What I'm hearing from you is that you believe there are spots along the coast that actually could support open-net aquaculture without doing harm to passing or resident fish.

Is that what I heard you say?

Chief John M. Smith: Yes. I think you could put it everywhere. I don't think they're harming wild stocks at all. I think that's a made-up thing from some people who just don't like fish farms.

When I ask people about fish farms, they say that they just don't like them. Well, that's not an answer. We're providing food and sustenance for some of the people who can't get wild stocks. Even when we have a huge run of sockeye in British Columbia, it never gets to Toronto or Ottawa. There's never enough.

Mr. Ken Hardie: Thank you for that.

Ms. Bergeron, we've heard about the salmon management program in Quebec. The stream-by-stream or river-by-river strategy has worked very well for you, from the sound of things. Are you aware of the different reaction of Atlantic salmon versus Pacific salmon?

We heard, for instance, that in the early days of finfish aquaculture in B.C., they tried to use the wild Pacific salmon, but that didn't work out so well because those fish really didn't behave or thrive well in an open-net environment.

Are there some specific differences between Atlantic and Pacific salmon that would account for our Pacific salmon being more at risk?

[*Translation*]

Ms. Myriam Bergeron: Are you asking me which of the two is at greater risk in an aquaculture setting?

[*English*]

Mr. Ken Hardie: Yes, I mean the risk that aquaculture poses, I suppose, to Atlantic salmon versus Pacific salmon.

[*Translation*]

Ms. Myriam Bergeron: To my knowledge, the risks are relatively similar. I'm talking about the risk of disease or the deterioration of certain wildlife habitats near the rivers.

We don't practise open net aquaculture in Quebec. However, in the Maritimes, a drastic decrease in wild Atlantic salmon populations occurred after some open-net aquaculture facilities were introduced.

I don't know what the sensitivity differences might be between the different species of salmon, but salmonids are very sensitive to their environment.

[*English*]

Mr. Ken Hardie: Thank you for that.

Mr. Farrell, you were talking about sublethal infections, diseases and toxins. When you studied those, did you study them individually or did you also look at the cumulative effect of any combinations of diseases, toxins or infections?

Mr. Anthony Farrell: The basic design of an experiment is to change one variable at a time. You have to do the one variable first. Then you can look at the cumulative things.

We did a neat little twist with our one variable. We introduced the PRV into the sockeye salmon and the Atlantic salmon. After the virus established itself for several weeks, we took the oxygen level of the water and we progressively reduced it and reduced it and reduced it in a short-term period. Then we asked how well they tolerated the hypoxia. Well, if your blood and your heart are not very good, you're not going to tolerate hypoxia. You wouldn't try to climb Mount Everest, for example. We found that they were unaffected compared with the sham controls. We have looked at mixtures, but only in what I would call the shorter term.

● (1715)

The Chair: Thank you, Mr. Hardie. Your six minutes are up.

We will now go to Mr. Trudel for six minutes or less, please.

[*Translation*]

Mr. Denis Trudel (Longueuil—Saint-Hubert, BQ): Thank you, Mr. Chair.

I'd like to thank all the witnesses for being here.

I'd like to thank you too, Ms. Bergeron. In fact, most of my questions are for you.

At the previous meeting, which you did not attend, I mentioned that I was not a salmon fisher. However, I know that catch management and accounting by the ZECs is important.

I personally fish for trout in lakes or ZECs. My father-in-law goes fishing in the rivers of the Matapédia region, with which you are no doubt familiar, and in the Sainte-Florence area, where he goes in September. Let's just say he brings us some fish.

I know that fish quota management is rather strict in Quebec and that it works rather well.

Based on your experience, because I'm obviously not here to speak about mine, do you have in mind any examples of federal programs or federal salmon management measures that resemble those in Quebec, but that are ineffective and that we ought not to adopt?

Ms. Myriam Bergeron: It's true that in Quebec the situation for salmon fishing and fishing in general is very specific, given that fishery management is a power that is largely delegated to the provincial government.

I also think that this delegation of power and the creation of networks of not-for-profit organizations like ZECs and wildlife reserves, which are locally responsible for managing the areas, are clearly effective at managing the resource sensitively.

As for those aspects that the federal government might well learn from, it's an interesting avenue that allows us to divide the management of the areas in question into zones that are biologically compatible with Atlantic salmon.

Mr. Denis Trudel: You spoke briefly earlier about collaboration with first nations for fisheries conservation and management.

Could you tell us more about it and explain exactly how the Quebec experience could serve as a model that could provide some ideas that could be applicable to Pacific salmon?

Ms. Myriam Bergeron: First of all, we investigate the status of salmon populations in a given river on the basis of thresholds calculated to ensure that yearly reproduction rates make the species sustainable. We calculate a river's productivity every year. This allows us to categorize how it fits into the various health classifications that will determine whether certain fisheries need to be opened or closed.

It's an interesting model to use because depending on the status of the population, only traditional fishing or sport fishing might be allowed. If a population is in very good health, there could even be commercial fishing.

The collaboration with first nations respects their ancestral rights and their community needs, while allowing the development of sport fishing, which provides significant regional benefits.

Mr. Denis Trudel: It also works very well. Based on my experience with trout in the ZECs where I go fishing, things are extremely well managed and it's even a bit frustrating. Some lakes are accessible for only one day during each fishing season. With cottages on the shores of some lakes, it's clear that the lakes are full of fish. However, to protect the species, they can only be fished at certain times or on certain days during the summer. What works well for trout is no doubt also good for salmon. The rules are more or less the same.

Apparently, the recording of salmon catches is done in a rather unique way in Quebec. Can you tell us how collaboration with fishing communities and organizations in the field is the key to managing and protecting salmon?

● (1720)

Ms. Myriam Bergeron: The roles, responsibilities and mandates of each of the field organizations to which salmon management is delegated are well structured through complex regulations, under agreements that provide them with the tools they need to perform their managerial role.

This collaboration is therefore very important, because these organizations keep an eye on the river, which they know well. They can even make decisions on fishery management and determine catch opportunities that are consistent with the natural variability of what is happening on the river. This sometimes allows us to take the decision-making out of the office towers and place it directly in the field. This collaboration between the departments and legatee organizations is essential and works very well.

[*English*]

The Chair: Thank you, Mr. Trudel. Your time is up.

[*Translation*]

Mr. Denis Trudel: Thank you very much, Ms. Bergeron.

[*English*]

The Chair: We'll now go to Mr. Johns for six minutes or less, please.

Mr. Gord Johns (Courtenay—Alberni, NDP): Thank you, Mr. Chair.

I want to thank all of the witnesses for the important work they've been doing on wild salmon.

I'm going to start with a question for Dr. Farrell.

You talked about the importance of devolving local decision-making. Can you elaborate on what you mean?

Mr. Anthony Farrell: I think Ms. Bergeron just did a fantastic job of explaining how local decision-making can be very effective. I'm not familiar with the details of it, but what I do see as a citizen and member of a number of panels is that there are many players and many voices.

I think one of the beauties of COVID is that we've moved to these virtual meetings. I now see that more voices can come around the table in the future, but, ultimately, in regard to the decisions that have been made at the federal level in Ottawa, I'm not sure that they have a clearer picture of the details than, say, Newfoundland or the Northwest Territories, which are probably going to start raising Arctic char up there as a cultured species. Out in B.C., we're very distant. We have the Rocky Mountains, and, of course, Alberta is going to get all the fish shortly anyway because of global climate change and all those black glaciers melting.

Things will change, but they'll change at the local level. I worked at the local level with DFO. We sat down around a table, and we decided the maximum temperature the Fraser River can reach in the summer when sockeye salmon are moving up in numbers. We said 18°. We went out and tested it, and guess what? Different populations that inhabit the Fraser River have different upper temperature limits. If you're dealing with the ones that are the wimps, the couch potatoes, that go just up to the Harrison River system, put them above 17°, and they're in trouble. Put them at 21°—and it does reach 21° degrees—and they're toast. They're dead. They're dead, so you wouldn't want in-river fishery at that particular stock of fish, and that sort of detail I have worked out through swimming experiments in respirometers to test their cardiac performance.

I'm very passionate about the knowledge that I generate. I believe it's good, sound, solid science. That's part of the decision-making.

First nations have to have a voice.

Mr. Gord Johns: Speaking to that, I'm really glad you're going there. Obviously, in the budget they announced the development of the new Pacific salmon secretariat and the centre of excellence for restoration. In terms of the government's commitment to reconciliation, case law and the United Nations Declaration on the Rights of Indigenous Peoples, do you believe that the model should be a government-to-government-to-government model that needs to be actioned and a relationship that needs to be built?

● (1725)

Mr. Anthony Farrell: I firmly believe that we shouldn't overlap the jurisdictions. Migratory fish are a problem, because if they're in fresh water the province gets jurisdiction and then with migratory, if it's a case of salmon, the federal government gets it.

If you work together you can eliminate those things. I don't see why first nations could not monitor their local environments in and around fish farms. They don't do it now, but why can't they be involved in that? I think the Okanagan Nation Alliance is a fantastic example of being able to rejuvenate sockeye salmon coming up the Columbia River, crossing international boundaries now. It's a success story. Why? Because it's a local phenomenon.

I guess work together is the principle, yes.

Mr. Gord Johns: I really appreciate that.

Chief Smith, could you elaborate too? You heard my question about the new development of the Pacific salmon secretariat, the importance that it's not just top down, that it is a government-to-government-to-government approach, like Dr. Farrell talked about. He talked about the importance of everybody working collaboratively and ensuring that indigenous communities get the support at the local level.

Do you support a model that's applying UNDRIP in principle and that's obviously committed to reconciliation?

Chief John M. Smith: Yes, I'm into working together with anybody if it makes things better and healthier and more accommodating. It's difficult when there are three different opinions that don't want to come together and work as a unit. Federal people in Ottawa trying to run a fishery on the Pacific coast, we've always known that was not a very good plan. They've cut the number of fishery personnel in British Columbia, and now they're united with the Coast Guard, and it seems like they're not very interested in fishing.

Mr. Gord Johns: In terms of rights, Chief Smith—

The Chair: I'm sorry, Mr. Johns. Your time has gone over.

We'll now go to Mr. Mazier for five minutes or less, please.

Mr. Dan Mazier (Dauphin—Swan River—Neepawa, CPC): Thank you, Chair, and thank you to the witnesses for coming out this afternoon.

Ms. Bergeron, one of the components to your organization's mission statement includes the sustainable development of sport fishing. Recreational fishing is very important to the people I represent. Can you inform this committee about the important role that recreational fishing has in generating economic benefits that are used to protect species?

[*Translation*]

Ms. Myriam Bergeron: Yes, of course.

In five of Quebec's tourism regions, salmon sport fishing generates $50 million a year in direct economic benefits. These are largely reinvested in conservation, and also in wildlife protection, because it's important to ensure that there are enough wildlife protection officers and assistants to do the job everywhere. They are hired by the fishery management legatee organizations.

Sport fishing therefore definitely helps to maintain this system as well as an entire recreational tourism network for accommodation, restaurants, outdoor shops, etc. It is therefore a very significant and sustainable regional economic driver. There are economic considerations, but the sociocultural aspect is also important. Salmon fishing remains very important to the regional communities.

[*English*]

Mr. Dan Mazier: Thank you.

Do you think recreational fishers get enough credit for the good that they do, for all their economic activity and for how they protect and work in a sustainable way?

● (1730)

[*Translation*]

Ms. Myriam Bergeron: Part of Quebec's vision is to get the sport fishing community engaged by disseminating information and advertising various activities. These fishers take pride in salmon, beautiful rivers, the state of the environment and the water quality in these rivers. They also take pride in the beautiful landscapes. Everyone benefits.

[*English*]

Mr. Dan Mazier: Perfect. Thank you.

Chief Smith, you mentioned in an op-ed the important role that aquaculture has in your community. You wrote, “We are striving to become self-sufficient.” This is referring to the salmon farms and the beneficial outcomes they have for your community.

Can you explain how salmon farming is helping your community to become self-sufficient?

Chief John M. Smith: We have a partnership with Grieg whereby they share some of the benefits of growing the fish. They pay us rental for the rafts in the water and they hire some of our people to work there. We do some contract jobs. Now we're taking over a net cleaning business, which will provide another four people with regular, good-paying jobs.

As I said, we're building a new community so we need every penny we can get. The amount of money we get from the government just doesn't sustain that.

Mr. Dan Mazier: Were you consulted by the federal government before they announced the plan to phase out open-net fish farming?

Chief John M. Smith: No. We were not among the ones they talked to. That scared us to death because we're a little northwest of where they did all this closing of farms.

Mr. Dan Mazier: Is that concerning to you that the government didn't come around—

Chief John M. Smith: Yes.

Mr. Dan Mazier: —didn't consult everybody it was impacting?

Chief John M. Smith: There should have been more. We were surprised at how quickly they did that. I think they were told by their own scientists, “Don't do that.” Every time we get reports at our meetings in British Columbia, the fisheries scientists say, “There's little or no effect of farm fish on the wild stocks.” They couldn't make it any more clear. Then all of a sudden, bang, bang, bang. It really hurt. I live in Campbell River. We had a couple of plants here that are just going to suffer and maybe not even stay open. We're talking about 7,000 workers in the fish farm industry.

The Chair: Thank you, Mr. Mazier.

Mr. Dan Mazier: Thank you.

The Chair: We'll now go to Mr. Morrissey for five minutes or less, please.

Mr. Robert Morrissey (Egmont, Lib.): Thank you, Chair.

Welcome to the witnesses on this important study.

My question is for Chief Smith. I want to follow up on the former member's questions.

Chief, could you give me a monetary number for the economic value footprint of fish farming specifically to your community? If you don't have it, maybe you could forward it to us.

Chief John M. Smith: The rental payments we get annually work out to.... We have three farms, so it works out to about $300,000 or $400,000 for them. We don't really want to divulge how much we get to the other players, but it's a substantial amount. It would be even more substantial if we got another farm.

Mr. Robert Morrissey: That's fine. I understand confidence.

Chief John M. Smith: We have to be careful about certain things.

Mr. Robert Morrissey: Yes, confidentiality.

You referenced having three farms and you're looking to expand. You've been farming for 30 years. Is expanding fish farming one of the key ways you're going to grow your community economically?

● (1735)

Chief John M. Smith: We have little else in our territory. It was either forestry or fishery, and we all know what's happening with the fishery. It's no longer a viable industry, and it's not going to come back just because you get rid of fish farms. We know that. Anybody with a little bit of thought would know that, even though one lady said that the orcas came back because they heard they were taking the farms out of the archipelago.

We get nonsense like that going on, but it's really necessary to have these farms right now. I wouldn't change my mind on them. We haven't seen the damage that people say they cause. We have guardians who are testing different seafood around our farms—prawns, shrimp and crabs. We do some of that testing. We set our boat up to do that and we haven't noticed any damage like that.

Mr. Robert Morrissey: Chief, did I hear you correctly in answering? You said you had a report from DFO scientists that showed little or no effect from farmed fish. Did I hear you correctly?

Chief John M. Smith: That's right.

Mr. Robert Morrissey: Do you have that report? Could you provide it to the committee if you have it?

Chief John M. Smith: I'll get it from the Canadian government, from Fisheries.

Mr. Robert Morrissey: What report should we request? Could you provide the specific title? I would like to see that.

Chief John M. Smith: If I had the title I would, but we get these reports from our meetings, the provincial meetings that we have in British Columbia. You can read them in the paper from time to time.

Mr. Robert Morrissey: Okay. Thank you, Chief.

I want to go back to you, Mr. Farrell, because you were referencing a success story on the Okanagan system. Could you elaborate a bit more on what is happening there that makes that a success story as it relates to salmon on the west coast?

Mr. Anthony Farrell: I guess the proof of the pudding is in the eating. Large numbers of Okanagan salmon are coming back to those lake systems.

They started with a local bottom-up approach. The late David Schindler was involved in looking at the productivity of those lakes. They started at ground zero, if you will. They asked, "What is there for these salmon to eat?" Then they put in a hatchery, and that hatchery has provided the enhancement.

I hear a thumbs-up from somebody there.

Mr. Robert Morrissey: What you're saying is that there are models that show how you can rebuild a stock.

Mr. Anthony Farrell: Yes—

Mr. Robert Morrissey: Okay, that's interesting.

Mr. Anthony Farrell: —and there are good examples of how you can destroy stocks.

David Suzuki wrote a book about the 10 worst collapses of salmon over.... It's an old book now. I suggest that you pick it up, and you'll see many British Columbian examples and others from elsewhere. What you see as the common denominator is fishing, fishing, fishing. Fishing traditionally kills fish. There's no risk; it's a definitive.

When you talk about impacts, you have to really ask the question, and what's happening in Quebec with the management system is what I call non-retention fishing. I work with commercial fishers here, and maybe Chief John Smith even knows about the recovery box, which is mandated on some boats.

If you catch a coho salmon and you're supposed to be catching a sockeye salmon, what do you do? Well, you throw it overboard. Is it going to live? Probably not, especially if it's been in a gillnet. Well, we were able to recover them. We had a specially devised recovery box that was built by a commercial fisherman, a gillnetter, who then sold his licence because the stocks were going down.

Anyway, there are all sorts of local solutions out there.

The Chair: Thank you, Mr. Morrissey.

We'll now go to Mr. Trudel for two and a half minutes or less, please.

[*Translation*]

Mr. Denis Trudel: Thank you, Mr. Chair.

Ms. Bergeron, I enjoyed hearing you earlier when you mentioned the pride you felt in Quebec's fishery management models. I agree with you, and feel this pride myself, even though I don't know much about salmon fishing. People in Quebec take pride in protecting the species. Even sport fishers understand that it's in their own interests to help ensure that the species survives and that we can enjoy it for many years to come. It's very important.

You spoke earlier about the consequences of adding Quebec Atlantic salmon to the endangered species list. What do you feel we could do to keep the species from declining further and suffering the fate of Pacific salmon?

What can we do to prevent such a decline?

● (1740)

Ms. Myriam Bergeron: Of course.

First of all, Atlantic salmon should not be added to the endangered species list, at least for populations in Quebec. We need to continue with the monitoring that is currently being done.

There could also be enhancement measures for the rivers. There are issues, as is the case for forests, that are linked to land use planning. When we talk about integrated management, we mean integrated watershed management. It's important to make sure that everything that happens on a salmon river watershed can limit the risks for Atlantic salmon, and also ensure that there is no harm to the environment in which salmon swim and reproduce. All kinds of things are needed here, some of which are linked to major environmental issues and water quality. I spoke about climate change, where considerable work is needed; not only research work, but also work to develop decision-making tools for those who do the detailed management of Atlantic salmon.

Mr. Denis Trudel: Thank you.

I'm guessing that I have about 10 seconds left. I had a rather more complex question for Ms. Bergeron.

[*English*]

The Chair: Thank you.

You only have two seconds left.

[*Translation*]

Mr. Denis Trudel: Okay. I'll wait for the next round.

Thank you, Mr. Chair.

[*English*]

The Chair: Thank you.

We'll now go to Mr. Johns for two and a half minutes, please.

Mr. Gord Johns: Chief Smith, could you speak to how important the principles of free, prior and informed consent are as the government works on its strategy to save wild Pacific salmon?

Chief John M. Smith: I'm not sure that they really plan on saving it. We've been watching commercial fishing, for instance. The boats get bigger and faster and faster. They're called the killer fleet. Somebody forgot to tell the fish that these guys are going to fish seven days a week and 24 hours a day to pay for the costs of their boats.

Mr. Gord Johns: In terms of indigenous free, prior and informed consent, we saw the decision to close the Discovery Islands fish farms was made with direct consultation with the local first nations. Many of the affected nations welcomed that decision the minister ultimately made.

Should the decisions of the other chiefs who say they want the fish farms closed also be respected in terms of where you're at and where you want to see fish farming?

How does the government balance the competing interests and concerns from the rights-holding first nations in the area where they have an obligation to consult?

Chief John M. Smith: We have to deal with the science and deal with the knowledge.

Mr. Blaney, who is our landlord, is anti-fish farm and he wasn't a fisherman to start with. He was one of the major players in that decision. Cape Mudge and Campbell River hardly got to participate in that, and we certainly didn't. That kind of decision-making just doesn't work for us.

Mr. Gord Johns: Do you believe that in your territory your voice should be respected and in Chief Blaney's area his voice and his nation should be respected in his territory? Do you believe it should be like that?

Chief John M. Smith: Of course, but there's got to be some kind of give and take. We're all neighbours here, but we keep things separate. He got rid of his fish farms and we didn't do anything about that. We didn't force him to keep them even though some of his members wanted them kept.

He shouldn't decide whether we have a farm or not. He hasn't met with us, sir, about it either. We have our office in his reserve here. We're leasing a piece of property from him until our new village is ready.

● (1745)

The Chair: Thank you, Mr. Johns.

We'll now go to Mr. Bragdon for five minutes or less, please.

Mr. Richard Bragdon (Tobique—Mactaquac, CPC): Thank you to each of the witnesses for appearing here. We appreciate your time and your testimony tonight.

I want to start off by asking you a question, Dr. Farrell.

We've heard a lot of witnesses and a lot of testimony has come through the committee. We usually come down to these questions as it relates to what you see as the most effective way that most people can agree upon whereby we can help save the Pacific salmon stocks. What are the practical, tangible things we can do?

We've heard a number of different ideas. In your estimation and in your opinion, what do you feel would be the top two or three things that we should be looking at right now?

Mr. Anthony Farrell: I would say, number one, if you want the biggest bang for your dollar, stop all fishing. It kills fish. You could potentially bring back a non-retention fishing from an economic point of view, but depending upon the species, you may not want to do it too far upstream on spawning adults. That's the research that we have done.

Number two, stop population growth in British Columbia. The Fraser River happens to go right through the major metropolis. You may or may not be aware of a recent study that's shown that there's a toxic product produced by car tires. Car tires have a compound that stabilizes the rubber, and there's research now in the States showing that a wash of this can kill salmon.

We may, just by driving our cars over the Port Mann Bridge, the Massey bridge, whichever bridge it is....

When I look at the damage to the streams that goes on, I think that we have to be really careful. We've had a great improvement in terms of creating riparian zones, but the north shore of British Columbia isn't home to many salmon populations anymore.

Mr. Richard Bragdon: Thank you, Dr. Farrell. I appreciate that. I just want to hear from the other couple of witnesses on this.

Chief Smith, in your estimation, what do you feel would be the best pathway forward for revitalizing the Pacific salmon stocks?

Chief John M. Smith: Mr. Farrell stole my thunder.

I believe that you would have to go to those extremes, and everybody would have to live by it. You're not going to go fishing. You're not going to kill fish. Even with non-retention fishing, you don't know if those fish are going to survive. That's another problem.

Right now, we're in the midst of trying to bring back a river in our territory that the logging industry destroyed. It's called the Fulmore. It used to have massive numbers of fish and a well-stocked sockeye early in the season, and there was no commercial fishing on it, but log jams in the river destroyed that.

There are lots of enemies to wild-stock fish—

Mr. Richard Bragdon: I appreciate that. Thank you.

Chief John M. Smith: —and least of all is my farm.

Mr. Richard Bragdon: Thanks, Chief Smith.

Madam Bergeron, is there anything you would like to add?

● (1750)

[*Translation*]

Ms. Myriam Bergeron: We need to adopt an approach that begins with scientifically determining the main threats to the species. That would enable us afterwards to implement conservation and development plans on a regional basis with local players, in order to respond not only to regional realities and issues, but also to the needs of the various stakeholders, like indigenous communities and the citizens of various towns and cities.

[*English*]

Mr. Richard Bragdon: Thank you, Madam Bergeron.

The Chair: Thank you, Mr. Bragdon.

We'll now go to Mr. Hardie for five minutes or less please.

Mr. Ken Hardie: Thank you, Mr. Chair.

I believe Mr. Cormier wanted to put a question in here. I'll cede some time to him.

The Chair: Okay.

I'll leave that up to the two of you. You have five minutes between you somehow.

Mr. Serge Cormier (Acadie—Bathurst, Lib.): Thank you, Mr. Hardie.

[*Translation*]

I have a question for Ms. Bergeron.

Ms. Bergeron, I'm from New Brunswick and I frequently go fishing on Quebec rivers. I love the way you manage your rivers. I know that what's going on in British Columbia is different, but what do you think is causing the decline in populations of Atlantic salmon and Pacific salmon species?

It's different here, but can we blame ocean aquaculture, or do you think there are other reasons for the decline in Atlantic and Pacific salmon populations?

Ms. Myriam Bergeron: Initially, the significant declines were certainly caused by commercial fishing, offshore bycatch and the various ways in which the territory and natural resources were used. Floating logs down rivers, for example, a practice used for many years although not recently, seriously damaged rivers. The consequences are still being felt today.

Aquaculture is certainly an important factor. There is also the whole issue of the territory, including forest management, for which practices are very different in Quebec than they are in New Brunswick. Best practices should be introduced and even improved to limit the impact of forest, municipal and farming activities on rivers.

Mr. Serge Cormier: So aquaculture in these regions is not the only reason for the decline in Atlantic salmon, and probably Pacific salmon.

Ms. Myriam Bergeron: It is unequivocally an important factor for Pacific salmon.

Comparisons can be made between locations where Atlantic salmon aquaculture is practised and others where it is not. Even though all these areas are managed in approximately the same fashion, we see significant differences. It's difficult to assign a specific percentage to aquaculture as a factor for the decline in the wild population, but its impact is undeniable.

Mr. Serge Cormier: Thank you.

[*English*]

I'll turn it back to my colleague, Mr. Hardie.

Thanks for that couple of minutes.

Mr. Ken Hardie: Thank you, Serge. I have a good question to get in here.

Dr. Farrell, when we look at the Fraser River system, what we've heard so far tends to suggest that most of the real challenges that fish face are in the lower Fraser River, let's say from Hope down to the ocean and then into the inland waters, the Salish Sea. Would you agree with that?

Mr. Anthony Farrell: I'm not sure where those data are coming from, to be honest. We've done a five-year tracking study of Chilko Lake salmon and their out-migration. The first thing is that we're only measuring the survivors that have been lake reared for one to two years. They normally rear for one year or two years in this very high elevation lake, Chilko.

Over the five years, between 30% and 50% of the fish didn't make it even to the ocean, but most of those died before they got to the Fraser River coming down the Chilcotin system, so that was particularly bad. We saw very little mortality in the lower Fraser from the confluence of the Chilcotin to there.

There have actually been very few studies with a rise, measuring the survival of salmon in the Strait of Georgia. One study recently published—and I can send this to you if you're interested—actually looked at the amount of time that was was spent by sockeye salmon migrating past salmon farms. The first thing was that two-thirds of sockeye went straight up the Johnstone Strait and avoided the Discovery Islands and the farms located there. The ones that actually had receivers that ping.... It's the same sort of little transmitters that ping if you're trying to steal stuff going out of a store. It's the same sort of technology, so you know how long they are around pinging on a salmon farm. They have a range of 200 to 800 metres. It's a matter of minutes. One-third of the fish are passing by salmon farms and they are spending a matter of minutes in association with a salmon farm. That's the period of contact. So whatever contact and impact you're imagining as a risk have to happen within that contact time. That study came out in 2021. That's how limited the knowledge we have is.

I'm not sure about the data you've heard. I haven't listened to all of your committees. You're a very patient committee, trust me. There is a lot of information out there, and I'm not on top of all of it, but I hope that helps a little bit.

● (1755)

The Chair: Thank you, Mr. Hardie.

That concludes two rounds of questioning. We have a few minutes left, so I've made an executive decision. I'll allow one quick question for each party. Make it a short question and a short answer, if you could.

Mr. Arnold, you were scheduled to be up next, so I'll assume you're going to go with the quickie.

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

I'll make it quick, but I'll make it to all three, if they can answer quickly.

Would you say co-operation and collaboration among all parties—indigenous, non-indigenous, commercial fishers, recreational fishers—is one of the key components to recovering our wild Pacific salmon stocks?

Mr. Farrell, you can go first.

Mr. Anthony Farrell: Absolutely, yes. Without it the polemics that exist in British Columbia right now will never get anywhere near resolved.

Mr. Mel Arnold: Madam Bergeron.

[*Translation*]

Ms. Myriam Bergeron: I agree completely. It's important to have common conservation objectives and then to move slowly forward to find sustainable solutions for everyone.

[*English*]

Mr. Mel Arnold: Thank you.

Mr. Smith.

Chief John M. Smith: I think it would be really good to have this communication among all the user groups, but getting it done will be the good question. That would be like herding cats, because everybody has made enemies out of each other. The commercial fishermen don't like recreation fishermen, and so forth.

The Chair: Thank you, Mr. Arnold.

On the Liberal side it was supposed to be Mr. Morrissey, so....

Mr. Hardie?

Mr. Ken Hardie: Oh, I always have a question ready.

Dr. Farrell, on hatcheries, will you be able to, not necessarily verbally but perhaps in a follow-up item, give us some advice on what would constitute a good strategy for hatcheries in the process of either rebuilding or re-establishing salmon populations?

Mr. Anthony Farrell: Yes. This is a fantastic question that I think was just let slip in DFO. A question was asked about the difference between wild Pacific salmon and Atlantic salmon that are cultured. Yes, “domestication” is the key word. What we're doing with our hatcheries is treating them like domesticated salmon, and then we ask them to go out in the real world.

I work with the Norwegian industry to exercise and train hatchery salmon so they do better when they get out in the ocean. Thinking about the real-life situation of a salmon before you release it and get it a bit more prepared for life out in the real world would be fantastic for hatcheries.

● (1800)

The Chair: Thank you, Mr. Hardie.

We'll now go to Mr. Trudel for a very short question, please.

[*Translation*]

Mr. Denis Trudel: Thank you, Mr. Chair.

My question is for Ms. Bergeron.

You have spoken at length about the Quebec model, and told us how well it was working. Among other things, you discussed the ZEC model.

What could the rest of Canada and the other provinces learn from Quebec? Would it be possible to adapt the ZEC model to address the Pacific salmon problem in British Columbia?

Ms. Myriam Bergeron: Yes, it could certainly serve as a model that might be of interest. It would be possible to explore the model and everything that goes along with it, from regulation and the various types of agreements between different organizations, and adapt it to what is happening to Pacific salmon in British Columbia. The adaptation could be carried out via different arrangements with the indigenous communities or through different types of organizations that could be established.

It's also important within the network to focus on good governance. Various citizens can contribute a great deal to the decision-making and priority setting. The common objective then becomes conservation of wildlife species and the environment, and achieving sustainable development for the regions.

[*English*]

The Chair: Thank you, Mr. Trudel.

I noticed that Mr. MacGregor, the member for Cowichan—Malahat—Langford is in to replace Mr. Johns.

I'll give you a chance for a brief question if you want, and hopefully we'll get a brief answer.

You can make Mr. Johns proud by doing that.

Mr. Alistair MacGregor (Cowichan—Malahat—Langford, NDP): Thank you so much, Chair, and thank you for your indulgence.

Professor Farrell, I'll direct my one question to you.

I live right near the mighty Cowichan River here on Vancouver Island, a river we're all very proud of. My community is investing substantial dollars, as is the federal government, in building up a weir at the lake, so we can hold more lake supply back and have better environmental flows over the very dry and hot July, August and September months.

In terms of the $647 million allocated to save wild salmon in the budget, what are some of your top priorities? What do you think of projects like building up weirs so we can have those better environmental flows, so salmon that are migrating up the river during those months have a better chance of survivability?

Mr. Anthony Farrell: I think what you're doing is now speaking about local solutions, looking on the ground and seeing what the local problems are.

The Cowichan River system is phenomenal. The fish that are released to go out to the ocean are just decimated on the way out. Brian Riddell and I sat down and looked at the data, and it was like, “Oh my goodness, don't let all the fish out in one go. Don't create a feeding frenzy.”

I think that there will be different solutions. I think it's empowering local people to find out what the problems are and the best way to find those solutions.

We all have to live and we have to have an economy, but I think there's a five-letter word that resonates with probably everybody here, and that is “pride”. If you can make local communities proud of what's going on and be part of it, you can effect major change.

If weirs work for you, great.

● (1805)

Mr. Alistair MacGregor: Thank you.

The Chair: Thank you, Mr. MacGregor. I know Gord would be very proud of that question and the answer.

I want to say a big thank you to our witnesses today for enlightening us with their knowledge as we're cluing up this study on the state of the Pacific salmon.

I will allow the witnesses to leave.

Everybody will switch over to go to the in camera session, and we'll see everybody back in committee as quickly as possible. We'll all leave and sign back in again.

Thank you, everyone.

Mr. Anthony Farrell: May I just ask one question? If we want to send written information in, to whom do we send that?

The Chair: You can get that information from the clerk, or it's FOPO@parl.gc.ca .

Mr. Anthony Farrell: Okay. Thank you very much.

Thank you, everyone

The Chair: You're welcome.

[*Proceedings continue in camera*]