HOUSE OF COMMONS
CHAMBRE DES COMMUNES
CANADA

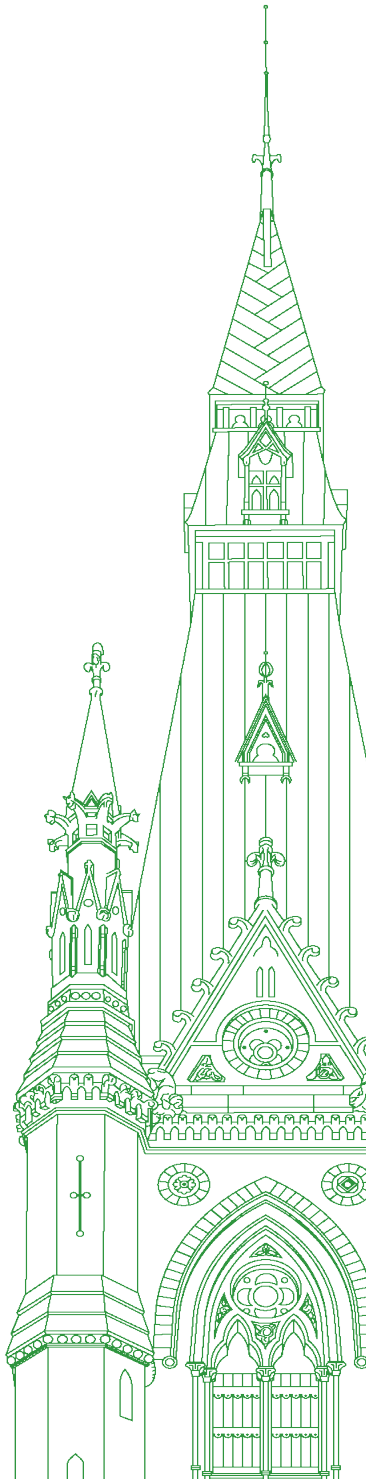
44th PARLIAMENT, 1st SESSION

Standing Committee on Fisheries and Oceans

EVIDENCE

NUMBER 023

Thursday, May 12, 2022



Chair: Mr. Ken McDonald

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● (1100)

[*English*]

The Chair (Mr. Ken McDonald (Avalon, Lib.)): I call the meeting to order.

Welcome to meeting number 23 of the House of Commons Standing Committee on Fisheries and Oceans.

Pursuant to Standing Order 108(2) and the motion adopted on February 1, 2022, the committee is resuming its study of science at the Department of Fisheries and Oceans. This meeting is taking place in a hybrid format, pursuant to the House order of November 25, 2021.

I won't go through all of the rules about COVID and wearing a mask.

For those participating by video conference, when you are ready to speak, click on the icon to activate your mike. Please speak slowly and clearly. When you are not speaking, please make sure that your mike is on mute. For interpretation, you have the choice at the bottom of your screen of English, floor or French. I'll remind everyone that all comments should be addressed through the chair.

I'd now like to welcome our witnesses here for today, albeit by Zoom. As individuals, we have Michael Dadswell, retired professor of biology at Acadia University, and Alexandra Morton, an independent scientist. From Ecotrust Canada, we have Tasha Sutcliffe, senior policy adviser. From Watershed Watch Salmon Society, we have Stan Proboszcz, senior scientist. From First Nation Wild Salmon Alliance, we have Mr. Robert Chamberlin, chairman.

I am informed that Mr. Chamberlin will need to sign off a little earlier today—only about 20 minutes or so—to attend another meeting. If members could direct questions to him first, if they have questions for him, it would certainly help out. Of course, witnesses can provide written submissions to the committee via the clerk.

Mr. Cormier, you have your hand up.

Mr. Serge Cormier (Acadie—Bathurst, Lib.): Yes, Mr. Chair.

If I can, for a brief moment.... I don't want to take too much time.

Regarding what we talked about with the science study, I think the members will agree with me that we need to hear from witnesses throughout Canada. There are a couple of pressing issues. I've talked a bit with Mr. Perkins, Mr. Small, Mr. Morrissey and Mr. Kelloway regarding some decisions that were taken about shrimp, for example, and mackerel and herring.

I want to have some clarification from the clerk. Maybe we can make sure that at the next meeting, on June 2, we can hear from some of those witnesses. I think it will be good, especially regarding the situation with shrimp—there was a big quota drop this year—to at least have their view on it. For example, we could hear from the Fédération régionale acadienne des pêcheurs professionnels here in my riding, FFAW, some other associations and also maybe MFU.

I'm wondering if all the members of the committee would accept hearing from those groups at the next meeting. Don't get me wrong, witnesses on the screen. We love having witnesses from the west coast, but there are also some issues here and I would certainly like to have the opportunity to ask some questions to those groups.

I'm sure my colleagues around the table—Ms. Desbiens, Mr. Perkins, Mr. Small and my other colleagues—will want that to be moved up. I'm not sure when the clerk can fit those witnesses in, but if it is possible to have them on June 2, I hope my colleagues around the table will agree with me on that.

I'm done. If there are some comments, Mr. Chair, I'll leave it to you.

The Chair: Thank you, Mr. Cormier.

I noticed the clerk was nodding her head in a yes motion, so I believe the intent is to have those people at that meeting. If that suits your request, we don't have to check into it any further than that.

Go ahead, Mr. Small.

Mr. Clifford Small (Coast of Bays—Central—Notre Dame, CPC): Mr. Chair, Mr. Cormier mentioned FFAW. Would that be Keith Sullivan from our submitted witnesses?

Mr. Serge Cormier: I'm not sure who will attend, but if we can have a panel of the groups that were impacted by some of those decisions.... For example, for shrimp, it would be the Fédération régionale acadienne des pêcheurs professionnels, for example. FFAW will be one from your region.

Madame Desbiens, there are also a couple of groups from your area in Quebec.

I'm not going to decide who is going to attend, but some of those associations should be there. They were impacted by some of the decisions—like the MFU for herring and mackerel, and PEIFA, for example.

Have a panel with those groups that were impacted on east coast with some of the decisions is what I'm saying.

The Chair: I believe they're lining up those witnesses for, as you said, June 2. A number of groups that represent individual harvesters in different sectors either had their names put forward or have asked to appear.

We're hoping to get that done sooner rather than later. June 2 should work out okay.

Mr. Serge Cormier: Okay. Thank you.

The Chair: Thank you, Mr. Cormier.

We'll start with our opening statements from witnesses.

Mr. Chamberlin, you have five minutes or less, please.

Mr. Robert Chamberlin (Chairman, First Nation Wild Salmon Alliance): [*Witness spoke in Kwak'wala*]

[*English*]

I've acknowledged you all as knowledgeable and respectful people. I'll give you my traditional name, which is Galagame'. I'm from what you may know as the Broughton Archipelago. The words I am going to share today are from my heart and on behalf of many, many first nations of British Columbia. Thank you for allowing me the opportunity to present to you today.

I open my testimony to you by stating that the First Nation Wild Salmon Alliance completely supports previous FOPO meeting presenters Andrew Bateman and Brian Riddell of the Pacific Salmon Foundation and Gideon Mordecai of the University of British Columbia. Their combined testimony outlines extremely well the absolute disaster that is the Canadian science advisory secretariat in relationship to the open-net pen fish farm industry.

CSAS as a peer review secretariat has zero credibility with the first nation members of the First Nation Wild Salmon Alliance. When one examines the CSAS process, this is of course no surprise at all. A so-called science peer review process that allows a proponent, which is a fish farm company; industry [*Technical difficulty—Editor*]; and stakeholders, which are industry associations; to participate from the beginning to the end of this process is utterly and completely lacking any measure of objectivity or credibility. Canada's environment, wild fish and citizens deserve far more from government.

CSAS is a shining example of the environment within DFO that needs to be meticulously analyzed and restored back to its original mandate—namely, the mandate of actually working to protect the environment and wild fish for Canadians. You would be hard pressed to find a single first nation in B.C. that would state that DFO is doing a good job in managing wild salmon in British Columbia. This is well earned, given that I cannot think of a single wild salmon run in B.C. that could be characterized as healthy or abundant.

Oft spoken about are the aboriginal rights that first nations have, recognized in section 35(1) of Canada's Constitution, the Sparrow decision of Canada's Supreme Court and the government's commitment to implement the United Nations Declaration on the Rights of Indigenous Peoples. These three legal realities speak to food security. It has been said to me that 90% of B.C. first nations rely upon wild salmon. Again, that's 90% of 203 first nations. This means that wild salmon is far more than a simple menu choice. It is the foundation for culture and traditions, and of course a staple traditional food that is now becoming near impossible to attain for these purposes.

The decision that DFO minister Joyce Murray will be making soon needs to be deeply guided by the legal realities of the Supreme Court of Canada and Canada's constitutional protection of aboriginal rights. Simply stated, this is a case of rights versus the privilege of a licence.

DFO has accomplished measures of agreement in B.C. with some first nations. I suggest that these will suffer in credibility and function if transitioning open-net cage fish farms, as committed to by this government and supported by all parties, does not occur. A recent poll of British Columbians demonstrates vast support for this transition.

I attended a recent DFO ministers round table for this transition. The framework questions to guide discussions were entirely predictable and offensive. Frankly, they represented a buffalo jump of a predetermined outcome. This opinion was expressed very clearly by all the first nation chiefs who attended, demonstrating further the need for substantive change within the DFO to remove science from management so that the minister can enjoy clear information and recommendations that are unbiased and not continue to have government direction consistently undermined by DFO staff.

● (1105)

This was abundantly clear in the recent Mowi court decision on DFO Minister Jordan's decision for the Discovery Islands, where the director of aquaculture stated, which I will paraphrase, that she had no idea that not issuing the fish farm licences was being considered. This is preposterous, as I know for a fact that Ms. Allison Webb attended many of the first nation consultation sessions with Discovery Islands first nations, which I was part of. Not issuing these fish farm licences was spoken of at every consultation session.

Previous FOPO reports, and both federal and provincial government commitments to UNDRIP, call for greater involvement of first nations in the management of wild salmon in British Columbia. This is also found within the previous DFO parliamentary secretary MP Terry Beech's "what we heard" report pertaining to developing and implementing the transition of open-net cage fish farms from B.C. waters. This needs to occur.

For today's topic of CSAS and science, first nations can play a clear and objective role in this effort. One outcome of the Broughton fish farm LOU, which I helped negotiate—and of course it is the first time Canada witnessed the implementation of the United Nations Declaration on the Rights of Indigenous Peoples—was the building of a genome lab housed at the Okanagan Nation Alliance hatchery.

This prepares first nations to accomplish science that is leading edge with an outcome that is focused solely on identifying disease and pathogen threats to constitutionally protected food security. True arm's-length resourcing for this lab could be invaluable to safeguard severely depleted wild salmon and escape the environment of DFO as a captured regulator of the fish farm industry. The environment, wild salmon, first nations and the citizens of Canada deserve far better than what we are experiencing today.

When I was part of the consultation process for the Discovery Islands, the first question that I asked Jay Parsons was about the CSAS process itself. I asked him about the proponents of science and about industry and about stakeholders. This elicited about a four-minute speech non-answer.

● (1110)

The Chair: Mr. Chamberlain, I'm going to have to end it there. We've gone way over the allotted five minutes.

Mr. Robert Chamberlin: Thank you, sir.

The Chair: Hopefully anything else you need to say will come out in the line of questioning.

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

Mr. Stan Proboszcz (Senior Scientist, Watershed Watch Salmon Society): I've worked on salmon farming issues for almost 16 years for Watershed Watch. I believe this case study illustrates an unreported suppression of science by DFO to protect the salmon farming industry at the risk of wild salmon. My written submission includes evidence, e-links and context. It can be found on watershedwatch.ca.

In 2012, the independent Cohen commission made strong recommendations and reversed the burden of proof onto DFO to show that salmon farms are a minimal risk. To paraphrase recommendations 18 and 19, they concluded that salmon farms in the Discovery Islands may be a risk to wild sockeye salmon. Unless DFO can show they are of minimal risk, they should be removed by September 30, 2020, or sooner, if evidence arises. I was on the steering committee of the first five CSAS risk assessments.

Did DFO change the risk assessment plan midway to avoid inconvenient science? There are at least two DFO website references that state that more than nine risk assessments were planned. When DFO, including Jay Parsons, held a press conference on September 28, 2020, to reveal their evidence of minimal risk, we learned there were only nine risk assessments. Assessments on sea lice and cumulative effects weren't done. Did DFO change the plan?

In July 2015, DFO's Dr. Jones and Dr. Garver began lab studies on the effects of salmon lice on sockeye and the cumulative interactions with IHN virus. This research was published in science journals in 2019. The two studies made conclusions pertinent to Cohen's recommendations 18 and 19. They found that “infection with *L. salmonis* caused a profound physiological impact to Sockeye Salmon”. They also concluded “that the reduced survival in co-infected sockeye salmon resulted from the osmoregulatory consequences of the sea lice infections which were amplified due to infection with IHNV”.

DFO appears to obfuscate and cherry-pick science and misdirect Canadians and news media away from inconvenient science and precautionary action. When you go to the DFO media release of September 28, 2020, then to the link entitled “Work to support recommendation 19” and then to “Scientific research on sea lice”, logically this would be the place to objectively and transparently list all the research to conclude that sea lice are of minimal risk.

Let's look at that link closely. Look at the “Sea lice on wild salmon” section. This appears to link to DFO research projects, but no external studies are listed. One paragraph in the “Sea lice on wild salmon” section generally encompasses a sockeye and sea lice research project. However, it talks about it as if it is still in progress. No findings are included in the paragraph. When you click on the research abstract link under this sockeye project that appears to be still in progress, it goes to the wrong project. The correct DFO link describes a completed 2010 project and findings of significant negative impacts on pink, chum and sockeye from sea lice.

An ATIP includes a January 2017 statement from DFO's Dr. Ian Keith to Adrienne Paylor. How can DFO science not share with their health management counterparts that they have data including that sockeye are the most susceptible species of Pacific salmon?

● (1115)

Another ATIP from October 1, 2020 includes questions from a Canadian news reporter to DFO and includes Timothy Sargent. They ask to see the information DFO relied on to conclude that sea lice are of minimal risk. DFO responds to this question with two e-links, and neither direct the reporter to the Jones and Garver sea lice, IHN virus and sockeye research.

Is this not obfuscation, cherry-picking and misdirection by some in DFO at the expense of precautionary action to conserve wild salmon?

Thank you very much, committee.

The Chair: Thank you for that.

We'll now go to Ms. Sutcliffe for five minutes or less, please.

Ms. Tasha Sutcliffe (Senior Policy Advisor, Ecotrust Canada): Thank you very much for having me here today.

For those who don't know me, I am currently an independent contractor, and I am here in one of my roles as a senior policy adviser for fisheries with Ecotrust Canada.

I have spent 25 years looking at ways to realize fair, sustainable and prosperous fisheries, and I believe that fisheries, as a renewable resource, can be well managed for environmental, economic, cultural and social objectives.

Since we are here on the subject of science I want to start by saying that, though I have engaged in many scientific pursuits throughout my career, I am not a scientist by trade and I have a deep respect for those who are. Today I am an outlier in that I am focusing on the role of social science in fisheries management and the issue with the lack of focus and capacity on this. My area of work is on the west coast.

Many challenges face Pacific region fisheries—climate change, competition for space and species, species at risk, market shifts—you name it. Science is instrumental for identifying, monitoring and resolving issues that arise from this complexity, but how do we prioritize scientific activities, build investment in these priorities and leverage our findings? We first must have a policy framework that includes clear objectives across the full spectrum of societal priorities, and we must have a framework for science that supports these.

The natural sciences are, of course, a critical and huge part of this, but practised in isolation it is not enough to get us where we want to go, just like focusing our economists solely on big-E economic metrics like GDP will not get us where we want to go.

Where do we want to go? What are we measuring success against?

For the most part, existing language is around economic prosperity and conservation, but for whom, at what geographic scale and at what timescale? Do we have consistent objectives around social and cultural outcomes and community well-being and health? I would argue that we could do much better at defining this, especially in the Pacific region where we are lacking in a comprehensive policy framework that identifies clear objectives with little to no direction given on social, locally economically relevant and cultural outcomes.

We do have a number of resources that identify key considerations for fisheries in Canada and many of them do touch on the socio-economic and cultural importance of them. In this committee's 2019 study on the subject of west coast fisheries, it was pointed out that key priorities of a sustainable fishery include the environmental, economic and social aspects of sustainable development and that there is a need for explicit socio-economic objectives and policies. Further, this study recommended that DFO collect socio-economic data to inform regulation.

Most recently in the report titled “Engaging on Canada’s Blue Economy Strategy—What we heard”, social equity, cultural and local economic considerations were raised many times as a priority, including in fisheries.

The latest Fisheries Act itself states that the minister may consider, among other things, social, economic and cultural factors in the management of fisheries, but how is the minister to consider socio-economic impacts and outcomes if we have no science to base those considerations on? There needs to be a way to provide both natural and social science and intersect these findings, not compartmentalize them.

It just so happens that we do have a start to this, as the Canadian Fisheries Research Network developed one. This 50-person team's six years' of research was published in two major peer-reviewed publications. The network recognized four pillars of sustainability—ecological, economic, socio-cultural and institutional or governance—and developed a full framework that articulates the scope and candidate objectives and values of these four pillars. This sounds like a great start.

Let me be clear. This is not an argument meant to alter scientific priorities to diminish necessary outcomes around conservation—quite the contrary. It is to ensure that where decision-making has the potential to achieve conservation outcomes and maximize societal benefits, this is enabled. The absence of this focus results in unnecessarily harmful policy, which can take decades to unravel.

Take the example of licensing policy outcomes in the sea cucumber fishery. In this lucrative fishery the lion's share of landed value is not going to the harvesters, but is being lost to, in many cases, non-local licence owners and fish companies leasing a licence, who land and sell their product and then pay the fish harvester a fraction of the fair landed price. Further, this species has the ability to provide high value in processing jobs and wholesale margins, yet this also is being exported.

● (1120)

Science can investigate issues such as this, compare scenarios around solutions for decision-making that achieve environmental goals and maximize societal benefits. We are in precarious times. We require new ways of doing business and innovation in our economic system that ensures we are contributing to a better quality of life for current and future generations, and promoting resilience in the natural and social systems we rely on.

This is ever-challenging in the face of disastrous events, such as pandemics and climate change impacts, which can bring our current system to its knees. We must be able to respond quickly and adapt in times of crisis. It is more crucial than ever to manage our renewable resources to this end. This requires a comprehensive multipillared approach to science and informed decision-making, but will result in a much stronger foundation on which to move forward in sustainable development.

Thank you very much for the opportunity to share my thoughts and experience with you.

The Chair: Thank you.

We'll now go to Ms. Morton for five minutes or less, please.

Ms. Alexandra Morton (Independent Scientist, As an Individual): Thank you.

The questions you pose are critical to Canadians because DFO management of wild salmon has failed to maintain the fish or the fisheries. Wild salmon must reach the open ocean, and salmon farms are a barrier to them. The problem is that, as salmon farms release unnatural levels of types of pathogens, wild salmon exposed to the farms breathe them in, and these pathogens come into direct contact with their bloodstream. Most wild salmon from the southern half of B.C. are currently inoculated with industrial aquaculture pathogens from Mowi, Cermaq and Grieg, and they become carriers.

Here are three examples of DFO actively avoiding appropriate response to this risk.

In 1990, DFO Pacific Region Director General Pat Chamut wrote the director of trade policy that, “Continued large-scale introductions of [Atlantic salmon eggs] would eventually result in the introduction of exotic disease agents of which the potential impact would be...biologically damaging...and economically devastating”. He was right. The Norwegian PRV was in some of those 30 million eggs.

In 2013, Mowi told the Federal Court that they would be “severely impacted” if they were prohibited from transferring PRV-infected fish into their farms because their hatcheries were infected. While PRV is considered a disease agent everywhere in the world except British Columbia, DFO hid the science showing that PRV causes organ failure in chinook salmon, thus allowing this Norwegian blood virus to escape DFO regulations and spread into the Skeena, the Fraser and everywhere in between, and 95% of farmed salmon for sale in B.C. supermarkets is infected.

During the 2020 consultations between the Minister of Fisheries and Oceans and seven first nations of the Discovery Islands on the renewal of 19 salmon farm licences, Dr. Miller-Saunders briefed DFO's director of science that young Fraser sockeye were being infected with the bacteria *Tenacibaculum* as they passed the salmon farms in the Discovery Islands, and these fish appeared to die. The director of science went and briefed the B.C. Salmon Farmers Association with this information but not the minister, even though the primary concern of the nations she was consulting with was the impact of the farms on Fraser sockeye.

In the third case, DFO staff know that sea lice in salmon are dangerous to young wild salmon, and they set a limit on the number of lice per farmed salmon in the aquaculture conditions of licence, but Mowi, Cermaq and Grieg farms are unable to meet this threshold.

On January 24, 2022, Mowi wrote to Rebecca Reid, director general, DFO, Pacific region, stating that the proposed changes to the conditions of licence “could have significant impact on...the...financial performance of Mowi's operations”. Specifically mentioning sea lice, they say that the pace of “regulatory change is outpacing our company's capacity.” Two weeks later, the draft conditions of licence contained the weakened requirement to produce a plan to reduce sea lice, with no requirement that the plan was actually successful. Mowi's letter is a statement that the salmon farming industry cannot survive regulations that protect wild salmon, and it's clear that wild salmon are not surviving without these regulations.

Here are my recommendations to your questions.

Issue conditions of licence that provide immediate and significant relief to wild salmon and clarity to the salmon farming industry. See my written submission for specifics.

Form a non-government board of scientists to monitor DFO's response to science.

Create a regional director of wild salmon, as per Cohen commission recommendation number four, and populate this division with the scientists who are developing the powerful genomic tools that pinpoint the choke points that are killing wild salmon to allow highly strategic response to reverse extinction curves.

● (1125)

Collaborate closely with first nations. Make this data open access, allowing the mathematical modelers who charted our path through COVID to inform the minister—if we do this, we expect these outcomes.

In closing, I just want to make sure you know that 36 salmon farms have been or will be removed by the 'Namgis, Kwikwasut'inuxw, Mamalilikulla, Gwawaenuk, Kwiakah, Klahoose and Homalco first nations.

Thank you.

The Chair: Thank you for that.

We'll now go to Dr. Dadswell for five minutes or less, please.

● (1130)

Dr. Michael Dadswell (Retired Professor of Biology, Acadia University, As an Individual): I seem to be the odd person out here, being the scientist who used to be involved in DFO and who went to CSAS meetings all the time.

I'm a retired professor of biology from Acadia University in Wolfville, so I'm also the only person here from the east coast, rather than the west. For 55 years or so, I've been working on Atlantic salmon, sturgeons, lobsters, scallop aquaculture, the impact of tidal turbines on fishes, and freshwater ecology. I've worked for the Canadian wildlife service, the Huntsman marine laboratory, the Canadian Department of Fisheries and Oceans for nine years, and then I was at Acadia University for about 30 years. Through that, I've published about 255 papers, technical briefs and so forth.

I'm hoping I might be able to add a little bit to the context that's coming out of this meeting in terms of sea lice and salmon. That would be Atlantic salmon in the Atlantic Ocean, not the Pacific.

First, I'd just like to talk a little bit about my CSAS experience, seeing as how I was in DFO for nine years and they have approached me on other things. I have quite a background with CSAS.

Basically, my opinion is that the handling of different interpretations of scientific evidence and uncertainty in CSAS was a process that was one of my sore points while I was an employee of DFO, later a research scientist at a university and finally a retired fisheries scientist. I have found that differing opinions on data and conclusions that are contradictory to DFO policy and unsanctioned by CSAS are most often totally unwelcome and usually ignored. I can say that on the power of being in on at least 20 CSAS meetings, maybe, for different species and so forth.

My first one was in 1979 when I was a freshman working at DFO, basically. I participated in a number of meetings on the Canso causeway and what it might have done to the fisheries on the east coast of Nova Scotia—which was clearly a total disaster at the time because a lot of the lobster fishery had collapsed. I came up with some interesting scientific observations—which I thought as a scientist I was supposed to do—but when I brought them before the committee, I was essentially put down. They said, “Oh no, we don't agree with that.” It was stuff that came from other lobster fisheries in other parts of the world on how they recruit and so on.

We had to write the papers to go into the CSAS report and the technical report publication. My paper was directly opposed by the lobster biologists and managers at DFO. I was in a different unit, actually. I wasn't in the management unit. Literally, when I published a paper in a technical report, they put a page at the end of it saying they disavowed having anything to do with it. Anyway, that's my start with CSAS.

The funny thing is that, as time goes by, scientific opinions change. The present DFO lobster group now accepts my original hypothesis as to why the Canso strait and eastern coast lobster fishery collapsed, and they are using it in their management decisions. How about that?

A similar process took place while I was working on the development of tidal power while I was still at DFO. This would be in about 1979, 1980 or 1981. I had a research group that was looking at the Annapolis River in Nova Scotia, which was up for having a test turbine put in. Anyway, when I went into the CSAS meetings on that.... First off, let me say that, as a scientist, I spent about six months researching what hydroelectric turbines do to fish, and it's not a very pretty picture—lots of mortality.

● (1135)

Here they were. They were going to put this big huge turbine in the Annapolis River, and it was going to affect all of the fish populations, as far as I was concerned. I was again completely ignored. I was probably the only one who knew how fish turbines kill fish and so forth at the time, and what happened? Jumping forward to the present, 35 years later, they finally closed the Annapolis turbine down because it was killing all the fish in the Annapolis River. Guess what. Originally I was in the meeting and said, “Don't do it”, but anyway, they don't seem to listen very much.

The final example I want to give you is Atlantic salmon in the Atlantic Ocean. I just finished writing a paper on this entitled “The Decline and Impending Collapse of the Atlantic Salmon Population in the North Atlantic”, and that is what's happening.

Virtually all the big rivers that had over 100,000 Atlantic salmon fish runs are now collapsing in the Atlantic Ocean. I brought this up in 1998 and 2000 to the Minister of Fisheries at the time, and I told him that I thought that IUU fisheries were causing the problem, that Japan, Denmark and probably other nations were out there taking Atlantic salmon in the open ocean before they could come back to the Atlantic rivers.

You don't have this problem so bad in the Pacific ocean because you have a very good organized fisheries group there that does surveillance, so they are keeping the Japanese and the other people, Chinese, in check to a degree and allowing the fish runs to remain quite good. In places like Alaska, you're having more problems than in B.C., and I understand that completely.

What is happening in the Atlantic Ocean is that rivers like the Miramichi River, the River Foyle in Ireland, which had a huge salmon run, and now the Tana River in northern Norway, which also had a 100,000 to 200,000 fish run, have collapsed, and they are all closed to fishing, not only commercial but recreational.

Here in 2000, I was telling the Canadian DFO minister about this, and it was going through a CSAS meeting. I wasn't invited, but in the end, they told me I was foolish and so forth and so on, and they didn't agree with my conclusion.

As an example, in Nova Scotia where I live, there used to be about 100 Atlantic salmon fishing streams. Now only three are open to recreational fisheries and, of course, the commercial fishery was closed in 1984.

The Chair: I'm going to have to end it there, Mr. Dadswell. It's gone way over the five-minute allotment of time.

Dr. Michael Dadswell: Okay, I'm not surprised.

The Chair: Thank you to all our witnesses for their opening statements.

We'll now, of course, move to questioning, but before I do that, I want to recognize Ms. Elizabeth May, the MP for Saanich—Gulf Islands, who has joined us on Zoom. I'll put in a little plug for her. I'm sure, if anybody has a few minutes to spare, she'd like to get in some questions. If she were here in person, she'd have her hands out asking for that, so I thought I'd throw it in.

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

I'll remind members to identify who the question is for so you don't lose your time staring at the screen.

Start when you're ready, Mr. Perkins.

Mr. Rick Perkins (South Shore—St. Margarets, CPC): Thank you, Mr. Chair.

Thank you, witnesses, for coming to this important study. It is our fourth witness meeting on it, and we've learned a lot from the scientists who have been before the committee.

I'd like to specifically welcome Dr. Dadswell to the committee, since he is a constituent of mine as well. Perhaps I'll start with Dr. Dadswell.

You spoke quite a bit about the CSAS process and the fact that the science you were doing, even as a scientist within DFO, was being rejected by CSAS. What were they telling you over and above saying, “We don't accept this”? Was it science from outside? Was it policy or socio-economic issues that they put over? Did they have contradictory science to what you were proposing?

Dr. Michael Dadswell: No, they were scientific issues. Basically, as a scientist, I remember when I was a freshman in DFO, and I worked out this hypothesis about why the fishery off the eastern coast of Nova Scotia collapsed back in the 1950s, 1960s and 1970s. I thought this was rather interesting from a scientific point of view, but when I spoke about my scientific findings in other fisheries in other parts of the world and compared them to our problem, it was more or less against policy.

They weren't going to pull the Canso causeway out, and that was what the trouble was, so my viewpoint, based on science, was completely ignored. Now the interesting thing is that the new group in lobster management on the east coast agrees with me completely, and they're using my research as the basis for their present management.

● (1140)

Mr. Rick Perkins: Thank you.

Could I ask you a bit about the lobster science that's conducted now? I know you did a lot of it over your career, particularly in helping to create the lobster fishing areas and seasons that we have now. In particular, how does DFO measure scientifically the health of the lobster stocks?

Dr. Michael Dadswell: I'd say it basically depends on the landings, as far as I can see. There are area scientific studies going on. I know when I was in DFO we had a fairly big project going in southwest Nova Scotia. I don't know whether that one is still going through, but it might be. We had another one in Prince Edward Island.

Really, what DFO does is that they look at landings and make most of their decisions, a posteriori, on what's going on. Other than that and some basic lobster biology that they do science on, those are the things that they're really working out.

My hypothesis back in 1979 was that the egg drift, the larval drift of lobsters, through the Canso causeway and down the eastern coast of Nova Scotia, was cut off when the causeway was built. When they cut that off, the lobster stock collapsed from normal fishing. There just was no recruitment, so it was down in the stocks.

Mr. Rick Perkins: If I could, and I have limited time, I want to ask you a couple more questions.

Dr. Michael Dadswell: Okay.

Mr. Rick Perkins: It sounds as if there isn't actually any real understanding of the size of the biomass of the lobster stocks. It's basically based on landings, and landings have been growing every year relative to effort, and that's in the inshore.

Are you aware in the offshore, LFA 41, which is the largest and only area of the lobster fishery that actually has a TAC, a total allowable catch, if there was ever any science done to determine whether that is a reasonable size of a TAC? I think it's 77,000 metric tons. Is there any science to support that?

Dr. Michael Dadswell: Yes. That research was done during the 1980s. I'm trying to remember the name of the fellow who was involved in it, but he did do three or four years of work out on Browns Bank, and so on and so forth, to develop the TAC for that fishery.

Mr. Rick Perkins: There hasn't been any science done on the state of the lobster stock in LFA 41 since the late 1980s that you're aware of.

Dr. Michael Dadswell: Not that I know of—

Mr. Rick Perkins: Wow.

Dr. Michael Dadswell: —but I may be wrong. I'm not right up to date on who's doing what research where, but I haven't seen anything.

Mr. Rick Perkins: Perhaps I could ask one more question related to Atlantic salmon.

Relative to the size of the declining returns that we're seeing every year in Atlantic Canada on Atlantic salmon, what is the scale of what you believe is being done? I presume it's outside our 200-mile limit on the IUU fishing that's happening. Is DFO monitoring that at all?

Dr. Michael Dadswell: No, I don't think anybody, including DFO, is actually monitoring it.

Basically what happened is that, through negotiations, they were able to close down the west Greenland inland fishery, to a large degree, and give it a quota. Unfortunately, the same salmon that go up the coast of west Greenland and then come down through the Labrador Straits and out into the area off Newfoundland, between Newfoundland and Greenland, were outside the EEZ zone, the economic limits, and there's absolutely no surveillance by NASCO.

NASCO, really, the North Atlantic salmon commission, is a joke. They haven't done one lick of surveillance since they took over in 1984.

Basically the problem that was happening in Greenland, where all the scientists agreed.... The Greenland fishery was going to collapse the salmon stock. Just move down the way, a little farther south, and everybody went right back to fishing salmon without any big problem. Between 1985 and 1990, the salmon stocks in the Atlantic Ocean dropped by 55%. Since then, it's just been a continual tail off. I think what's happening is.... If they miss any salmon in that area, then they go and try to get some more off east Greenland, which is in the middle of nowhere, as everybody knows. Nobody lives up there. Anybody can do pretty much what they want. The IUU fisheries are just hammering the place.

The only big river left with a really good salmon run, up until 2020, was the Tana River in northern Norway and Finland. It just got closed for fishing this year because of the collapse of the wild stock. It won't be long before there's no Atlantic salmon stock left in good shape, period.

● (1145)

The Chair: Thank you, Mr. Perkins. Your time has gone a bit over.

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

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

Thank you to all the witnesses. We could keep you here all day, I am sure.

Mr. Dadswell, in your description of what's going on in the east coast, it sounds like science is under stress everywhere.

Dr. Michael Dadswell: I agree.

Mr. Ken Hardie: I want to ask a few questions of Alex Morton.

First, I'll give a comment on how much we miss the big voice of Rafe Mair on the west coast, because he kept the issues right in front of everybody on a continual basis.

You had done an awful lot of work on sea lice. This is even before the Discovery Islands so-called studies. I believe you carried those studies past the point at which many of the operations were either reduced or shut down.

Can you report on what you observed on the sea lice infestation in wild salmon?

Ms. Alexandra Morton: Very briefly, sea lice are very easy to study, because they change their body shape every few days, so you know where they get on the fish. I studied them in the Broughton Archipelago since 2001.

When the previous minister, Bernadette Jordan, prohibited restocking of the Discovery Islands farms, because of where the companies were and their production schedule, last spring, all of the farms in the narrow channels of the Discovery Islands, namely Okisollo and Nodales, were empty.

When I went down there, the sea lice levels had absolutely plummeted. Instead of getting up to nine lice per fish, there were two lice, total, on 50 fish, and the condition of the fish was remarkable. These little pinks and chums were perfect. Their eyes were black. Their bellies were round. Those pink salmon will be returning this year, and I'm predicting that south of the Discovery Islands some river is going to get a lot of pink salmon back because of what Minister Bernadette Jordan did.

Mr. Ken Hardie: It's entirely regrettable that we've had that setback, in part due to the so-called science that was presented.

Mr. Chamberlin, it was troubling to hear that in the Federal Court of Appeal process, some of the first nations communities up and down the coast, concerned about the economic impacts of shutting down those operations, weren't as supportive of Minister Jordan's decision as they might have been prior to that.

Was that your observation?

Mr. Robert Chamberlin: I was part of the team for the Homalco First Nation, the Tla'amin Nation and the Klahoose First Nation, so I can speak about the input from them within the consultation processes.

There was absolutely no support for the fish farm licences to be renewed. The understanding and then the opinion of the CSAS process was foundational to that position. When you consider that the nine science papers that came out of CSAS were the DFO's response to Cohen recommendations 18 and 19, we now have verified and seen just the clear lack of objectivity in the analysis and delivery of those nine science papers.

Minister Jordan made the correct decision, because the nations that I was working with were very clear about the concerns they expressed in consultation with the first nations of the Fraser River, because we were discussing migratory salmon. Knowing that the impacts from fish farms in the Discovery Islands have a long reach well up the backbone of British Columbia, this represents an infringement of aboriginal rights.

As I understand it, all seven nations that were consulted were opposed to fish farms being in operation, but since then, a couple have changed their opinions. I'll leave that to you to surmise why that occurred.

● (1150)

Mr. Ken Hardie: Back to you, Ms. Morton, we have occasionally asked DFO officials about the Cohen commission recommendation to establish a regional director for salmon. They mumble an answer that basically says, “We haven't done it, and we're not really that involved in getting it done.”

If such a directorate were to be established, would you recommend that it be situated outside of the DFO?

Ms. Alexandra Morton: I honestly think that both have to happen. I think that DFO has to have a watchdog at this point, to make sure the science is getting through, but unless it's happening inside, I don't see how the minister is going to be properly briefed.

We, in British Columbia, currently have the leading scientists on studying the health of wild salmon, and these are the young scientists who are now working with Dr. Miller-Saunders. The power of that science is unparalleled. The fish can speak to us. Using the triggers in their immune system, we can find out exactly what is going on. If this data was brought to the minister, she could learn, “If we remove this, this is likely to happen”. Once you do that, you can go back and check the immune system of the fish again and see if it worked.

I don't understand why we have this big, aggressive, powerful aquaculture management division in DFO and nothing to counterbalance it with the wild salmon. I've looked for the person in charge of wild salmon in DFO and there is nobody, which is astonishing. Aquaculture is thriving. Wild salmon are collapsing. It's pretty clear that they need advocates within DFO.

Mr. Ken Hardie: We're out of time.

The Chair: Thank you, Mr. Hardie.

We will now go to Madame Desbiens.

[*Translation*]

Go ahead, Mrs. Desbiens. You have six minutes.

Mrs. Caroline Desbiens (Beauport—Côte-de-Beaupré—Île d'Orléans—Charlevoix, BQ): Thank you, Mr. Chair.

I'd like to thank the witnesses for being here today. Their testimony is very interesting, once again.

I would like to draw a parallel with the comments made by Dominique Robert, a professor at the Institut des sciences de la mer in Rimouski. His testimony was about the contribution of social science to scientists. That additional aspect should be taken into consideration.

Ms. Sutcliffe, what do you think the social science would contribute?

Can you give us a specific example of what could make a difference to the decisions of the Department of Fisheries and Oceans?

[*English*]

Ms. Tasha Sutcliffe: I'm sorry. Do you mean how an outcome could have been different in an existing example, or an example of contributions to social science in terms of categories of indicators that could be employed?

[*Translation*]

Mrs. Caroline Desbiens: Yes, that's right.

[*English*]

Ms. Tasha Sutcliffe: It's the latter. Okay.

Some examples of the socio-economic data that I feel are really important to inform decision-making could be categorized in different ways. One example when looking at economics, which is brought up regularly, would be the equitable distribution of benefit. It's a crucial indicator around how economics are benefiting and who they're benefiting.

In terms of social, there is the ability to access resources, diversity and occupation, community relationships, cultural leaders, traditions and knowledge, and preservation of heritage sites. As examples in health, there are indicators around physical and mental health. In governance, there's transparency, access to information, engagement and voice. In physical assets, there are things around the level of community infrastructure.

There are a lot of different ways that social science can be networked under a suite of categories. Very quickly, when you start to look at this broader range of societal, intended outcomes, it can inform decision-making. Another example that I—

● (1155)

[*Translation*]

Mrs. Caroline Desbiens: I'm sorry for interrupting you, Ms. Sutcliffe, but our time is limited.

Thank you for your answer. It gives us a good idea of the situation.

Along the same lines, Ms. Morton, I'd like to talk to you about predictability.

I'll give you an example. In eastern Canada, that is to say in Quebec, the decision was made to put an end to herring and mackerel fishing altogether. Mr. Robert told us that this was to be expected.

How can predictability be improved given the draconian decisions being made by the Department of Fisheries and Oceans?

Is there any science or scientists who could provide more details so that fishers, who are currently suffering from this decision, can better anticipate the consequences of such measures so that they can get support to redirect their type of fishing?

[*English*]

Ms. Alexandra Morton: I think this goes back to building a better pathway between the science and the minister. There have been warnings about the decline of wild salmon, very strong warnings, but because a lot of it has been suppressed, the fishermen don't really grasp what is going on, so I believe that a department of wild salmon within DFO, a director of wild salmon, is absolutely critical to provide clarity to all sides of this issue.

The Chair: You still have one and a half minutes.

[*Translation*]

Mrs. Caroline Desbiens: Okay.

I'll now turn to Mr. Proboszcz, whose testimony was very interesting.

Mr. Proboszcz, you were clear that the Department of Fisheries and Oceans chooses the scientific data that best suits it.

Can you give us a specific example of this?

[*English*]

Mr. Stan Proboszcz: Yes, I go over this in my document, which has a lot more detail and synthesis and the actual specific references. Essentially, we had a federal inquiry that put the onus on DFO to show that salmon farms were of minimal risk. My experience was that there were initially going to be 10 risk assessments. I assumed one of them would be sea lice. One risk assessment needed to be on sea lice, really. As we moved from 2012 to 2020, which was the deadline the Cohen inquiry put on DFO to come up with this evidence, soon it appeared that there were only going to be nine risk assessments. In the meantime, there were some pretty interesting lab studies being conducted in DFO looking at sea lice effects on sockeye.

I personally believe that DFO maybe changed the plan because that research turned out to be quite significant in showing that sea lice dramatically affect the health of sockeye salmon. DFO started to communicate about this evidence that they had of minimal risk, but they don't talk about these studies at all in their communications at the press conference or later on, when they talked to media people. I think it's because this research was inconvenient, and that's the clear example I illustrate in my document.

The Chair: Thank you, Madame Desbiens.

We'll go to Ms. Barron for six minutes or less, please.

Ms. Lisa Marie Barron (Nanaimo—Ladysmith, NDP): Thank you, Chair.

Thank you to all the witnesses who are here to talk about this important topic.

My first question I wanted to direct to Galagame'. I want to use your traditional name, Mr. Chamberlin, of course. I wanted to take a moment to thank you for all of your work, Bob, in the protection of wild salmon and continued work around indigenous rights. I wanted to ask you if you could expand a little bit around the precautionary principle and how it applies to fish farm operations and what the trickle effect might be from the lack of or the current state of the precautionary principle that is in place.

Thank you.

● (1200)

Mr. Robert Chamberlin: Thank you, Lisa Marie, for using my traditional name. I greatly appreciate it.

In terms of the precautionary principle, during the consultation process for Discovery Islands, that was a big part of the discussions, and we learned that there is no policy pertaining to fish farms in British Columbia to implement the precautionary principle. We were told that they'd gather what we described as small little tidbits and amass that as some measure of implementation of a precautionary principle.

To me, this is unacceptable when you understand the precautionary principle began after the east coast cod collapse, which we're all too aware of, and now that we've had nine science papers categorically dismissed through the examination of the CSAS process, the precautionary principle begs for the removal of fish farms from coastal British Columbia.

Ms. Lisa Marie Barron: Thank you.

Galagame', you spoke quite a bit about the importance of salmon, not just as a very nutritious food source but around its importance to the culture and traditions of indigenous people. I'm wondering if you can share a little bit around your thoughts on how fish farms may or may not infringe upon indigenous rights.

Mr. Robert Chamberlin: Thank you for the question.

Consider that there were no salmon rivers directly adjacent to the fish farms in Discovery Islands. The whole consultation process was about the impacts through migratory salmon. When that is the basis and when you consider the Supreme Court ruling of the Haida and the Taku Tlingit, even the potential to infringe on aboriginal rights triggers the duty to consult.

When we know and DFO acknowledges that Fraser River salmon—all stocks, not just sockeye—migrate through the Discovery Islands, and if we are in all good conscience to live up to the Supreme Court law and the constitution of this country, the minister must understand that the infringement of aboriginal rights from fish farm operations extends far beyond the site-specific. It does trigger the duty to consult, which I have never seen DFO even want to contemplate.

I believe it's because the vast majority of British Columbia first nations—we have identified 102—support the transition of fish farms out of the ocean. The DFO minister and the Canadian government must understand that this infringement of rights through the operation of open-net cage fish farms extends across British Columbia.

Ms. Lisa Marie Barron: Thank you, Galagame'.

I want to direct my last question to you as well to make sure we're able to soak in as much as possible before you leave early.

You had mentioned an encouraging step for indigenous-led science, specifically speaking about the genomics project in the Okanagan. I'm wondering if you can speak a little bit further about this project. How was it developed and why is this so encouraging for you?

Mr. Robert Chamberlin: Thank you.

The Broughton Archipelago fish farm LOU with the Province of British Columbia was a shared recommendation and some shared decision-making that implemented the United Nations Declaration on the Rights of Indigenous Peoples, which of course the federal government has committed to do as well.

One outcome was the genome lab. DFO created many hurdles and speed bumps for us to do the testing that was in the agreement through the genome lab in Nanaimo at the Pacific Biological Station, so we put together a proposal to build a genome lab that doesn't have those kinds of impediments to the outcomes of the chosen science that we wanted to pursue. As a result of that, the genome lab is built in the Okanagan Nation Alliance hatchery. As far as I understand, this past year has been about training and capacity, because it's far more complicated than just putting a sample in and pushing the green button.

We're at a place now where this is going to be ready to be functional. In terms of objective science, which clearly is not present within CSAS, the DFO and the stated path of federal and provincial governments to work with first nations on wild salmon, this is an clear opportunity that the government must embrace to advance many of the commitments. Most importantly, it's objective science that can then guide decision-making.

In terms of the question that was given to Alexandra Morton—who our family knows as Gwayum'dzi—about a manager for wild salmon, we need one. We need a first nations role there because of our constitutionally protected rights and because of the special place we have in this country. It would be fundamental to reconciliation and foundational across British Columbia.

● (1205)

The Chair: Thank you, Ms. Barron. Your time is up.

We'll now go into our second round of questioning.

We'll start with Mr. Arnold for five minutes or less, please.

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

Thank you to all the witnesses for appearing today. We've heard very interesting testimony throughout this study.

I want to bring us back to how this study's motion was worded so we're focusing on where we really need to get our testimony for the final report. The study motion was dealing with how DFO prioritizes resources and develops scientific studies and advice for the department, how the results of those scientific studies are communicated to the minister and how the minister applies that advice in ministerial decisions.

I'll start off with Mr. Chamberlin, if I could. Pardon me if I don't pronounce your traditional name, Galagame', properly. It's very nice to hear that.

Mr. Chamberlin, in recent months, we've seen the emergence of coalitions of salmon farm operators and indigenous partners. These coalitions are arguing that indigenous partners have the authority to decide whether salmon farms operate in their communities or not. We're also hearing from some of your testimony today the effects on wild salmon, fish or salmon through their entire migratory route.

In your opinion, how should the Government of Canada approach the scenario where indigenous rights for different first nations appear to be at odds?

Mr. Robert Chamberlin: When we think about first nations, lands, decision-making and consent as the government pursues this, it would be fine and wonderful if the impacts remained site-specific, but clearly they don't. This being the reality and the fact associated with migratory wild salmon, the government is now in a position where it would definitely need to hear first nations' perspectives on consent, but they must also be balanced with what impacts occur that are an infringement of aboriginal rights across the province.

Many times in consultation, many first nation leaders have heard that the government has made a decision contrary to what's been presented in consultation for the greater good, for the greater benefit of Canadians. That, as sorrowful as it is when it occurs, must come into play in this discussion, because the impacts of the Fraser River salmon writ large, not just sockeye, are occurring where the fish farms are operating in Discovery Islands.

That is what I think the Crown needs to do: Balance the impacts and the number of nations' rights that are being infringed upon, against the few jobs and the very small number of first nations that are supportive of this industry. Let's not lose sight of that.

That new coalition started out at 17, and then they misrepresented a number of nations, including mine, and I think it dwindled to a list of eight or nine first nations that are supportive.

Thank you.

Mr. Mel Arnold: Thank you.

Just moments ago, I believe you stated something along the lines that objective science is not present within DFO, and you mentioned the genome lab that has started in the Okanagan Nation Alliance hatchery in Penticton. I've had the opportunity to tour that hatchery and have seen some of the success they're achieving there.

Can you elaborate a little further on the lack of objective science and what you were referring to there?

● (1210)

Mr. Robert Chamberlin: In my earlier remarks, I highlighted what Mr. Jay Parsons' response was to me when I dissected and presented the CSAS process. When I say “lack of objective science”, I'm speaking about CSAS in relation to open-net cage fish farms.

When you have a proponent of fish farm company number one, and then the involvement of industry—which are fish farm companies two, three and four—and then stakeholders in multi-industry associations who can be brought in and who select people they're comfortable with to develop the terms of reference and to develop a list of who's going to review the science and develop a paper for peer review, there is no objectivity there.

If we were to pick another industry or another situation like tobacco, this would be utterly unacceptable to Canadians. It would be a very difficult time to pass the red-face test. I think Canadians deserve more. We need to move to an independent science stream in addition to DFO. That way, we could have shared methodologies and shared sampling, and the outcome would mean someone is going to have to take the tablespoon of Buckley's, and someone won't have to.

Mr. Mel Arnold: Thank you. I wish I had more time for other panellists, but I believe my time is up.

The Chair: Thank you, Mr. Arnold.

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

Mr. Mike Kelloway (Cape Breton—Canso, Lib.): Thank you, Mr. Chair. From Buckley's to me, I'm honoured.

This study has been very illuminating right up to speaking to you, so I thank you for all your insights, your experience and your terms of reference.

I will be sharing my time with MP May.

Galagame', we heard Dr. Morton speak today of the impact of the closing of Discovery Islands on the salmon stocks in terms of her observations that they were healthier. I'm wondering if you could share your assessment, or if you have an assessment. We'll then transition to your answer, and then to Ms. May.

Mr. Robert Chamberlin: Is that directed to me?

Mr. Mike Kelloway: Yes, sir.

Mr. Robert Chamberlin: The comments I would provide are based upon information that Alexandra Morton shared with me. I also speak with the leadership from my first nation, the Kwikwasut'inuxw Haxwa'mis, the 'Namgis First Nation and the Mamalilikulla. They are the ones who are doing this independent science of the Broughton Archipelago. What I'm learning and hearing from there is not very good in terms of defending the industry. We are learning that the concerns we have are indeed valid.

We are learning the path forward to protect wild salmon, and the removal of fish farms is the appropriate path. It's one that.... It's an occurrence that happens, as Alexandra Morton mentioned earlier, referring to choke points. Certainly, Okisollo is one of those places, and it's just the wrong place for a fish farm. In British Columbia, in regard to wild salmon, there is no right place. It's time to meaningfully transition this industry to land-based closed-containment.

I can tell you, and I want you all to know, I speak with first nations from across British Columbia that are very keen and interested in land-based closed-containment. This is the path where we're going.

Mr. Mike Kelloway: Thank you very much.

The Chair: Ms. May, please go ahead.

Ms. Elizabeth May (Saanich—Gulf Islands, GP): Thank you, Mr. Chair.

I'm going to start with an assertion. Having sat in on these hearings about science in DFO, they're consistent. I want to thank all the witnesses. The witnesses we had May 5 were also consistent. What we see relating to science in DFO and the aquaculture industry is not incompetence, not scientific illiteracy, but deliberate and dishonest efforts to block science, keep a minister in the dark and advantage the industry.

I put this to Dr. Mordecai when he testified May 5: What could possibly be the motive? He said there was a conflict of interest. DFO has a responsibility to promote this industry and, at the same time, to regulate it.

I wanted to ask Alex Morton this. Rather than add layers of new voices, like a director of wild salmon, which I support, if there's rot, don't we want to cut the rot out? Don't we want to figure out how to get rid of the conflict of interest, so that we're not constantly trying to chase real science and get it in front of a minister whose department should provide that minister with real science?

Thank you, Alex Morton, for your heroic work.

● (1215)

Ms. Alexandra Morton: Thank you.

I absolutely agree. I know where the rot is because I have ordered thousands of pages of conversations between DFO employees, but a lot of the worst players have left. It's very interesting. After the Discovery Islands decision, for example, Allison Webb left. The lead veterinarian left. The director of science left.

The ones holding the ball now are riding the coattails of a long history of deception of the B.C. public. I feel that they should be reassigned to perhaps move the industry onto land. Perhaps if the aquaculture management division.... They may be afraid for their own survival at this point. It makes me so angry that this extraordinary science, which we are paying for as taxpayers and which is being developed in DFO, has been locked in a room, with tape put over the mouths of these scientists. It is a huge disservice. I would imagine, for example, that if our current director of aquaculture would say, “Hey, stop dealing with the net-pen feedlots and get this industry into tanks”, she might be very effective at doing that.

The lack of honesty within the department has become so pervasive that I'm not sure they really even understand that the lights are on and we can see what is going on. For them to downgrade the conditions of licence when Mowi currently has an average of eight sea lice per fish in Quatsino and the limit that is considered safe for wild salmon is three, and when the aquaculture management division wants to allow this to continue.... We can see where this is going, and if we don't control it right now, we will lose our wild salmon.

Ms. Elizabeth May: Mr. Chair, do I have any time left?

The Chair: No, it's gone. It's way over.

Ms. Elizabeth May: I'm sorry.

The Chair: I'm not sure if you've gone way over or if Mr. Kelloway has. Right now, I'll blame Mr. Kelloway, because he's in the room.

We'll go now to Madame Desbiens for two and a half minutes, please.

[*Translation*]

Mrs. Caroline Desbiens: Mr. Chair, I'll give my remaining two and a half minutes to my colleague Ms. Barron.

[*English*]

The Chair: Go ahead when you're ready, Ms. Barron.

Ms. Lisa Marie Barron: Thank you, Mr. Chair.

Also, I'll say a huge thank you to Madame Desbiens. I'm more than happy to take this time.

I want to ask Ms. Morton my next questions.

Ms. Morton, I can't imagine how frustrating it must be to be saying over and over again the same things, based on science, based on information and based on what you're seeing first-hand with your own eyes, and to be here again repeating the same information. My hope is that we can finally start seeing some action, some changes and some positive movement on this. Thank you for your perseverance and for your ongoing work in this area.

I was hoping that you could share with us a little bit the importance of wild salmon, not just as an important species in itself, but in looking at the impacts on the entire ecosystem and how those wild salmon are essential as one part of the surrounding ecosystem and our environment.

Ms. Alexandra Morton: Thank you for that.

Wild salmon leave the river small. They go out into the open ocean and they basically collect the energy of the sun hitting the open ocean, because they feed on animals that feed on the zooplankton, stimulated by the sun. Then they carry those nutrients up into the watersheds throughout British Columbia and deep into the Fraser watershed, and those nutrients pour down over the hillsides.

You can actually see the growth rings in trees get bigger when there's a wild salmon run, and because the nitrogen they carry is different from terrestrial nitrogen, there's no question that it is coming from salmon. Salmon are feeding the trees that make the oxygen we breathe, but also, when you talk to climate scientists about our best technology to pull carbon out of the atmosphere, currently it remains the tree. By restoring wild salmon back to where they were in this ecosystem, Canada is playing its role in reducing the carbon that is threatening our entire society. They are a power cord to this coast. They're absolutely essential.

● (1220)

Ms. Lisa Marie Barron: Thank you, Ms. Morton.

I'm wondering if you can expand a little on the importance of DFO being able to provide effective oversight at fish farms. Perhaps you can speak a bit to the inability of DFO to visit the farms during a mortality event on these fish farms and how that impacts our ability to understand what's happening on the farms and to utilize that information to best move forward.

Ms. Alexandra Morton: Yes. Trying to understand what DFO was doing in terms of salmon farms was a very frustrating, long experience until I started accessing their actual emails and could understand what was going on.

There are long chains of emails where DFO biologists are trying to figure out what happened when there were die-offs on salmon farms. This has particularly been happening in Clayoquot Sound and also in Nootka Sound, the west coast farms. What the industry wants it to be is that they died of a plankton bloom, but when you go back through the conversation, there's evidence, for example, of novel pathogens. There's alarm in scientists. There are scientists saying they want to access that farm and test those fish, but those conversations are cut off. The final report is that the fish died of a natural plankton bloom.

At the moment, DFO is prohibited from attending a farm during a mortality event. The industry says that's to stop the spread of disease, but their own staff are coming and going on these farms. DFO has to be on those farms. This cannot be through a group that is tasked to promote aquaculture. That has to be taken right out of the equation.

In my view, the way the aquaculture management division has handled salmon farms has not only destroyed our wild salmon runs; it has also destroyed the aquaculture industry. If the regulations had been built to protect wild salmon from day one, we would probably have the leading land-based aquaculture industry right now. We would also have our wild salmon stocks.

Ms. Lisa Marie Barron: Thank you, Ms. Morton.

My final question—

The Chair: Thank you, Ms. Barron. Your five minutes are up.

Ms. Lisa Marie Barron: I'm all done. Thank you.

The Chair: You had two sections of two and a half minutes.

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

Mr. Bob Zimmer (Prince George—Peace River—Northern Rockies, CPC): Thank you, Mr. Chair.

Thank you to all our witnesses on this very important study.

My first question is for you, Mr. Chamberlin. As a fellow Robert, I don't know if I can call you Bob or not. I go by Bob here, and I've heard you called Bob. Does that work?

Mr. Robert Chamberlin: I've been called many things in my life.

Voices: Oh, oh!

Mr. Bob Zimmer: Well, it's good to have you here this morning, Bob.

My colleague mentioned the impacts. We've heard first nations talk to us about the impacts. If we essentially get rid of aquaculture in B.C., it will have some negative implications for many first nations communities, but we definitely have seen evidence of the negatives of certain aquaculture projects to our wild salmon. We're faced with that reality.

Are you aware of any science-based aquaculture—you referred to it in your previous statement—to get them out of the water? With science as the basis of your answer, what aquaculture projects could work in B.C. and not have negative implications for wild salmon?

Mr. Robert Chamberlin: I believe, and this is supported by what is occurring globally, that the land-based closed-containment fish farm industry is taking hold. I'm aware that the industry publication IntraFish in the past year or so actually started to do a monthly update on this growing portion of aquaculture globally.

When I think about it, we can have aquaculture in British Columbia, providing employment and contributing to the GDP of this country, but it makes no sense whatsoever to look at those numbers and accept that it's killing wild salmon to attain that.

● (1225)

Mr. Bob Zimmer: Right.

Mr. Robert Chamberlin: The evolution is like everything else. Every other industry's been brought to a place of evolution, whether it's mining or whether it's forestry. It is time now for Canada to do the same for land-based closed-containment. When you consider that it would not need to be coastal, and it wouldn't need to be Atlantic salmon, you would wind up having greater opportunity to diversify economies across the province, and not just in coastal British Columbia.

Mr. Bob Zimmer: Yes. I agree, Bob.

I'll go to you, Professor Dadswell, for my next question. Seeing that you're on the other side of our country, on the east coast, it's good to have you here this morning. My question for you is kind of what I spoke to Bob about in terms of what potential aquaculture projects could work with a sound basis in science.

With that question in mind, I've reached out to different countries, and before I even.... I don't want to lead you in my comments. Do you see other countries doing aquaculture better than Canada? If so, which countries are they? What are they doing differently?

I know that's a big answer for two and a half minutes, but do your best, Professor Dadswell.

Dr. Michael Dadswell: Before I say anything concerning that question, I just want to apologize to everybody. It turns out that Jay Parsons was my master's and Ph.D. student when he was in university, so I'm afraid he's been corrupted.

Getting back to the worldwide development of land-based aquaculture, it's going on in a lot of places, California particularly. Actually—

Mr. Bob Zimmer: Maybe I'll just back you up just a bit, Professor. What projects would you say, again science-based as well, would actually work without negative implications to wild salmon, and what countries are doing that? What could Canada do better? You started off by saying, “land-based”. Is that the only science-proven aquaculture that works in the world today?

Dr. Michael Dadswell: No. There are lots of different species of fishes that are raised in sea cages, and we don't seem to have a salmon lice problem with them. It's probably because, being the species they are, they don't carry too many salmon lice on them. They haven't affected other things—like in Greece, for one place. The fishery has completely gone more or less there except for aquaculture, so there are no wild populations that they're causing any problems to.

I should tell people on the committee and some of the witnesses here that land-based aquaculture of fishes is doing very well in the Maritimes. We have companies raising halibut, salmon and striped bass. All these fish are showing up in the fish markets in Nova Scotia and the rest of the Maritimes. They're doing fairly well, and I have never heard a single complaint from anybody about them.

There is a lot of land-based aquaculture in other parts of the world as well. People understand that it's like growing chickens, where you have them in a nice little barn and 45 days later you have a whole bunch of chickens. It works very well. You just have to deal with disease problems within the enclosure more or less, and the same works for fish.

Mr. Bob Zimmer: Thank you, Professor.

The Chair: Thank you, Mr. Zimmer.

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

Mr. Brendan Hanley (Yukon, Lib.): Thank you very much.

I will also take advantage of the time remaining for Mr. Chamberlin—Galagame'.

I'm from the Yukon, and I'm actually on this committee because of salmon, or my concerns about salmon. My question may be a little bit vague, but it's really going back to your point about the fundamental role of first nations in reconciliation and in being at the table in decisions about salmon.

My question is about governance and the relationship between the governance of B.C. first nations and the role that you play or should play. Is it a matter of goodwill? Is it a matter of governments? Are there fundamental changes in our relationships with first nations and provincial and federal partners that need to take place?

● (1230)

Mr. Robert Chamberlin: Thank you for your question.

When I consider that the provincial and federal governments have both made commitments to fulfill reconciliation, to implement the UN Declaration on the Rights of Indigenous Peoples, this to me is that evolution. We must not wait for the great big silver horse to come riding in with reconciliation in tow. We must find opportunities that present themselves to begin to implement meaningfully what that co-governance and shared decision-making can look like.

I think if we do this when opportunities arise, we are going to be able to demonstrate to Canadians that there is nothing to fear about first nations being in a consent-based, shared decision-making model, and that we can and, by and large, have fought to protect the environment and to have stronger environmental considerations in a wide range of different industries.

I believe that the global community is now crying out for and demanding greater environmental protection. In terms of salmon, this is an opportunity where, if the Government of Canada and the provinces were to implement this by creating some measure of roles within their system to engage with first nations—someone who has the respect and knowledge—this would facilitate the discussion. When you're talking about 203 first nations, you're talking about a lot of leadership, lots of different local concerns, but the global concern can be incorporated within the federal and provincial governments with some measure of first nation advisory roles.

Mr. Brendan Hanley: Thank you very much for that.

I'm trying to focus on solutions as we get towards the end of this study.

Ms. Sutcliffe, within DFO, are we talking about a process issue, a structural issue, a cultural issue? What would the next steps be to get CSAS and DFO to more of an integrated scientific approach? What would be your more immediate recommendations?

Ms. Tasha Sutcliffe: Thank you.

I would say, all of the above. It's quite a systemic issue, and the issues arise not the least from a lack of capacity and resources in the department. Even from the natural sciences side, certainly there are a lot of critiques on there needing to be more investment in stock assessment, for example.

Certainly I think capacity and resources to effectively develop a scientific framework, such as the one I described, is necessary, and always a challenging hurdle, but I think there are some fundamental approaches and thinking within the department that underscore culture, if you will, or maybe it's even training around what science is, and even what socio-economic science is. I've had very intelligent, good scientists within the department explain to me that what the department considers a socio-economic analysis, for example, is what I would actually refer to as a very shallow economic analysis. It doesn't go into enough detail on the basic economics around distribution of benefit, coastal community impacts, incomes, for example. I think there's a wholesale need to rebuild, really, the approach to science in DFO.

I'll think about some more clear recommendations around that in my written submission, because I think that's a really good question and I have a team of people who probably would be eager to contribute to it as well.

I should also emphasize the need for independence and transparency in that process.

Mr. Brendan Hanley: It would be great to get written submissions.

I'm getting the eye, so I guess I'm done. Thank you so much.

The Chair: You've gone a little bit over, Mr. Hanley.

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

Mr. Clifford Small: Thank you, Mr. Chair.

I'll start with Mr. Chamberlin.

Thank you, sir, for your expert testimony. I appreciate your concerns about the impact of fish farming on wild salmon stocks in British Columba. In fact, I'm concerned about that as well because I enjoy fishing salmon in British Columbia. I have quite a few friends there who love to take me salmon fishing.

I heard you mention independent science. What if we get the independent science you want and its findings don't match your opinion? Would you still consider it to be independent science?

● (1235)

Mr. Robert Chamberlin: When I comment about independent science, I envision a lab, a team of qualified, certified, experienced scientists accomplishing the same science as DFO, with an agreed-upon methodology, an agreed-upon process, where the outcome leads to truth, not something that is biased towards industry.

I posted a press release on my LinkedIn page, and I want to read to you what Dr. Kristi Miller-Saunders responded with:

> A glaring case of industry's right of refusal when it comes to dissemination of science. The only interpretation allowed is that put forward by industry. Federal and provincial governments knew about this study, and allowed it to stay blocked for 10 years while they funded other scientists to counter the findings.

That is what needs to be done away with, so that we have independent science.

Mr. Clifford Small: All right.

The Pacific Balance Pinniped Society has information that suggests that 50% of salmon smolts are eaten by pinnipeds in the estuaries as they enter the ocean. How would removing aquaculture remove that 50% risk of death by pinnipeds?

Mr. Robert Chamberlin: When we consider Justice Cohen's report, he was very clear there is not one industry or one impact that is annihilating the salmon in British Columbia. What we need is a holistic approach considering all of the stressors, all of the impacts, and reaching out and changing what we can when the opportunity arises. For fish farms that time is now.

Mr. Clifford Small: Okay—

Mr. Robert Chamberlin: In terms of pinnipeds, I don't know enough about them. I know there is support for a culling, but there's also a need for watershed restoration and so forth to assist B.C. salmon.

Mr. Clifford Small: Everyone is looking for the bogeyman. I'm sure a lot of the folks who are witnesses here are salmon fisher people themselves, and they've all had a salmon taken off their hook by a seal. There are countless videos on YouTube of seals removing salmon from the hooks of fishers.

There's a big question mark as to what's really destroying the B.C. salmon industry and wild populations. Who's the real bogeyman here?

Mr. Robert Chamberlin: There's a group of bogeymen. That's the thing. We need to identify them all and reduce them by whatever means is acceptable to protect wild salmon. Today, we don't have that. We don't have an eye for the protection of salmon in British Columbia. We have mitigation plans, which have failed endlessly.

I'm not in disagreement with you about the pinnipeds. I know that they represent an impact, but so do flooding, wildfires and fish farms. Where can we strategically address all of them, consistent with first nation views of environment and respecting the constitutional rights that first nations have?

Mr. Clifford Small: Do I have more time?

The Chair: You have 11 seconds, but I'm going to chew that up now by telling you that your time is up.

Mr. Clifford Small: Okay.

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

Mr. Serge Cormier: It's me now. Perfect. Thank you.

Thanks to all the witnesses for being with us today.

I'll speak in French for a large part.

[*Translation*]

Dr. Dadswell, you talked about Atlantic salmon, a topic I love. I have been a salmon angler for many years.

● (1240)

[*English*]

Dr. Michael Dadswell: I'm not getting the English translation, unfortunately.

The Chair: Mr. Dadswell, did you select English at the bottom of your screen for interpretation?

Dr. Michael Dadswell: Probably not.

[*Translation*]

Mr. Serge Cormier: Dr. Dadswell, can you hear the interpretation now?

[*English*]

Dr. Michael Dadswell: Okay. I'm getting the translation.

[*Translation*]

Mr. Serge Cormier: Perfect.

I want to talk about Atlantic salmon, which you touched on earlier.

As I was saying, I love angling on the river whenever I have free time. As you know, we have beautiful rivers in New Brunswick, including Miramichi, Restigouche and Nepisiguit, which is where I fish.

You said that there was a significant decline in Atlantic salmon. You talked mainly about the Greenland fishery. I know that agreements have been negotiated to reduce the number of tonnes of fish that people involved in commercial fishing can catch.

Are there any other factors playing a role in the decline of Atlantic salmon?

You mentioned illegal fishing, but aside from that, is there anything else that is preventing the expected return of salmon to our rivers?

[*English*]

Dr. Michael Dadswell: Apart from the fishing, most of the mortality on the salmon when they're moving out into the ocean comes from a predation by other fish, like striped bass in the Miramichi, and birds like gannets, which take salmon smolt off of Newfoundland. Things like pinnipeds also eat them anywhere they are in the ocean.

That is all part of the original, natural mortality that took place on salmon stocks anyway. What happens is that you have natural mortality and then you have the commercial fishing impact over and above that. If you can manage the commercial fishery, that's fine, but if you can't manage it, like illegal fishing offshore, they can take whatever they want.

Mr. Serge Cormier: For example, in the Miramichi River, I think you know of the problem that there is a lot of striped bass and smallmouth bass. I'm not sure where they are with the project of killing a lot of smallmouth bass. I think it was a product called rotenone.

What do you think of that? Do you think it's okay to do this? There seems to be a lot of confusion between scientists on whether to use this product or not. It's having a really huge impact on the population of salmon returning to the ocean and coming back into the Miramichi River. That was our most important river for restocking.

Dr. Michael Dadswell: The impact of the striped bass is not untenable or anything. If you have a big year for bass, then they will eat lots of baby salmon, mostly. The smallmouth bass will maybe do the same thing up in the river on the parr. The thing is, natural mortalities are pretty much adjusted by the population dynamics. If you have high mortality in one place, that tends to lower the mortality somewhere else.

When you have a directed fishery, there is absolutely no way the population can adjust to it.

Mr. Serge Cormier: Do you think everything is being done right now in terms of science? From the DFO science on the Atlantic salmon file, is there something we can do better to make sure that this population is going up again, or will we never see...?

Like you just said, I think it will be very difficult to have more salmon in the years to come. You're basically saying it will be just gone.

Dr. Michael Dadswell: It is practically gone. In the Saint John River now, the salmon stock has been completely collapsed for 30 years. It used to be that 80 to 100 metric tons a year of that fish were caught in the estuary—

Mr. Serge Cormier: You're saying that if we don't stop commercial fishing, there's almost no chance that we'll see those populations of salmon coming back in our rivers. Is that right?

Dr. Michael Dadswell: This is for unregulated commercial fishing, yes.

Mr. Serge Cormier: I have just a quick question for Ms. Morton, if I have time.

● (1245)

The Chair: Actually, Mr. Cormier, your time is up. I'm sorry.

Mr. Serge Cormier: Thank you very much.

The Chair: We go now to Ms. Desbiens for two and a half minutes.

[*Translation*]

Mrs. Caroline Desbiens: Thank you, Mr. Chair.

Ms. Sutcliffe, I talked to you earlier about the contribution of social science in DFO decisions. I'd now like to talk to you about the weight that social sciences can have within that department.

If I have a little time left, I'll give it to Mr. Cormier if he still has any questions for the scientists here today.

What weight might social science have in DFO decisions?

[*English*]

Ms. Tasha Sutcliffe: I think it's hard to answer because it depends on what's being considered. As I acknowledged in my testimony, there are certain requirements around meeting conservation objectives that may always trump certain other societal benefits or considerations when considering future impacts and generations.

In the kinds of examples that I've been studying and looking at, it's the absence, really. Those societal objectives then need to take enough weight that we're not producing policies and regulations that unnecessarily create a disadvantage for our own communities, our own harvesters and our own intentions around community well-being, which I think are very well described from the engagement processes on these strategies.

[*Translation*]

Mrs. Caroline Desbiens: Thank you very much.

I'll give the rest of my time to Mr. Cormier.

Mr. Serge Cormier: Thank you, Mrs. Desbiens.

[*English*]

Ms. Morton, since we have this study, there seems to be a disconnect between your group of scientists and scientists from DFO. Is that correct?

Ms. Alexandra Morton: No, it's not. We're in complete agreement with many DFO scientists, particularly those in the genomic lab. It's a split within DFO, which is so—

Mr. Serge Cormier: It's more management.

Ms. Alexandra Morton: You have one scientist in DFO saying piscine orthoreovirus is local to British Columbia and benign, and another one who is showing evidence that it's from Norway and is very impactful. This is really unbecoming for DFO to have its [*Technical difficulty—Editor*].

Mr. Serge Cormier: I'm not sure if it's me or you who is cutting out.

What do you think will be the solution for having confidence in science again for some of our group? There were some decisions lately in our region regarding shrimp, mackerel or herring, and a lot of groups from the industry or even from the scientific community disagreed.

What can we do? We want people to believe in science, but at the end of the day, if some numbers are not matching, what do we do?

Ms. Alexandra Morton: As Elizabeth May said, there's been deliberate dishonesty within the science in DFO, so open the windows and doors and let in the science from the outside.

Right now, with DFO science, some of it is an extreme outlier—failing to recognize the impact of sea lice, and the impacts of *Tenacibaculum* and piscine orthoreovirus.

Furthermore, you need to build a pathway in DFO—a conduit, a highway—between science and the Minister of Fisheries, because for Miller-Saunders to go and brief the director of science during consultations with first nations, and for that director to take that information to the B.C. salmon farmers and warn them, but not take it to the minister, that should red flag a serious problem in the flow of science within DFO.

It's an internal-external thing that has to happen, because it's so major right now.

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

[*Translation*]

Mr. Serge Cormier: Thank you, Mrs. Desbiens.

[*English*]

The Chair: We'll now go to Ms. Barron, for two and a half minutes, please.

Ms. Lisa Marie Barron: I was waiting for Madame Desbiens, but I will go now. Thank you, Chair.

I want to direct my next question to Ms. Sutcliffe.

One thing I was reflecting on is that we haven't spoken at length around the social science aspect of it—the economic and the social. I really appreciate your work in advocating for supporting communities and protecting the environment. I'm wondering if you could speak a little bit around what you feel is most essential for a transition plan for those who work on fish farms.

● (1250)

Ms. Tasha Sutcliffe: I think that's a very important question. Something that I feel very strongly about is the concept of a just transition and ensuring that workers in sectors such as this are not the ones bearing the brunt of the cost of these sorts of decisions, and certainly the numerous decisions that have led to this point.

Regardless of whether you do or don't support fish farms—I personally am in favour of moving to closed-containment farms—I think the idea of procedural fairness and a plan for transition that ensures these workers are not left high and dry is a critical one. Often it's the case with harvesters as well. These are people who live in small rural communities, often are not sustained off of super-high incomes, and likely have lower carbon footprints than you and I do. It's not fair to expect them to bear the full cost of sudden decisions that impact their livelihoods.

There's a lot of research on just transitions, and there are a lot of comments around opportunities for funding and retraining. However, realistically, in some of these communities, alternatives are few and far between. I think it takes a much more comprehensive approach and thinking about the economy as a whole.

That is partially why I'm so interested in socio-cultural science and thinking proactively at the outset about our decisions when it comes to use of our marine resources.

The Chair: Thank you, Ms. Barron.

There are about seven seconds left. If you get in a question, you won't have time for an answer.

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

Mr. Rick Perkins: Thank you, Mr. Chair.

My question is for Ms. Morton.

Last week, Dr. Korman was before the committee and talked about his study on steelhead, and how the major way to manage and deal with the challenges with steelhead is the active management of pinnipeds, seals and sea lions, as the primary source and problem.

In your work beyond sea lice, have you looked at that area as part of the impact on the stock?

Ms. Alexandra Morton: I have not personally, but I have stayed up to date on the science.

One thing you need to really be careful of is that seals and sea lions, for example, eat an enormous amount of hake, and hake is a fish that preys on juvenile salmon. Once you start messing with the natural order of things.... We also have a growing transient or big killer whale population that are currently feasting on these pinnipeds, so it's a dangerous path.

As was mentioned earlier, if you have five stressors on your salmon and you can remove a couple of them, you are way out ahead. We know that wild salmon are not surviving exposure to salmon farms. They're not surviving it anywhere in the world. This is an impact that not only can be removed, but it can be put somewhere else. If you want to go and shoot all the pinnipeds, you may well unleash a greater problem, which are the hake and other species that are happy to prey on these juvenile salmon. It's a tricky road to walk.

Mr. Rick Perkins: I have one more question for you, Ms. Morton, and then I'll share the rest of my time with my colleague, Mr. Arnold.

I'm sure you're probably very much aware of the Washington state supreme court decision, which was unanimous. It basically said in a ruling that sea lice wasn't having an impact, and that the salinity of the water was different in Puget Sound, which caused more sea lice.

Is the salinity generally different in Puget Sound than around the B.C. coast? Are you aware of the decision?

Ms. Alexandra Morton: I'm aware of the decision, but sea lice are the problem here. We have the salinity that is perfect for sea lice. If you do go into the southern Puget Sound, closer to the rivers and further from the ocean, you do get lower salinities. For the farms that are in lower salinities in British Columbia the sea lice levels are lower. However, the majority of farms are in the perfect salinity, particularly with the lower rainfalls that we are getting during the summer. The salinity in the inlets is reaching ocean salinity of 30 parts per million, which is very beneficial to the reproduction of sea lice.

● (1255)

Mr. Rick Perkins: Thank you very much.

Mr. Arnold.

Mr. Mel Arnold: Thank you for sharing your time.

I'll turn the question to Mr. Proboszcz.

The Cohen report recommendation number 71 stated,"The Department of Fisheries and Oceans should develop and carry out a research strategy to assess the cumulative effects of stressors on [wild] salmon and their habitats."

In your opinion, has DFO fulfilled this recommendation?

Mr. Stan Proboszcz: I don't think so. For example, in some of the research that I refer to in my document, there was an attempt to look at just the cumulative effects of one specific virus and sea lice. That work was conducted. It found significant interaction between those two pathogens and a significant effect on sockeye. However, DFO ignored that information and directed people away from that information, when it had its press conference. It concluded there was minimal risk of harm from salmon farms and all of the pathogens associated with them.

Mr. Mel Arnold: In your opinion, does DFO have the data and science required to consider the cumulative effects of stressors on wild salmon health and to drive management of fisheries and fish habitat decisions?

Mr. Stan Proboszcz: Cumulative effect is a very complicated thing to analyze and come to really strong conclusions, because it's so complicated. We're trying to assess all of the different factors that affect wild fish and how they interact. Once you get beyond one, two or three factors, it gets really complicated. The uncertainty gets higher and higher. It's a challenging problem to look at, but we start by looking at the interactions between just a few stressors.

Mr. Mel Arnold: Thank you.

The Chair: Thank you, Mr. Arnold.

Mr. Morrissey, there are a couple of minutes if you want to get in.

Mr. Robert Morrissey (Egmont, Lib.): I'm giving them to Ms. May.

The Chair: Ms. May, when you're ready, you have two and a half minutes.

Ms. Elizabeth May: Thank you very much. God bless you, Bobby.

I want to go back to Alex on something. I don't know if members of this committee would know the hard work that Alexandra Morton does. She made the point earlier about getting DFO staff into the operations, when a dying event is happening. I have a vague memory of this, so correct me if I'm wrong. I remember that the only way you got access to a salmon inside one of the fish pans in a toxic fish factory in the Broughton Archipelago was when an eagle grabbed a salmon. You were out and about and able to grab it, but for that, we wouldn't have evidence of the viruses in that fish.

Could you speak to that, Alex? Is that something that actually happened, or am I misremembering?

Ms. Alexandra Morton: That actually did happen. An eagle picked up a salmon but dropped it on the beach, and I was able to sample it. Furthermore, I had to go to the supermarkets and sushi restaurants to do the sampling.

The Broughton Archipelago transition initiative has gotten top scientists on the farms. We are going to know a lot more about the state of health of these farms, but it took first nations.... DFO refused to allow this to happen.

Ms. Elizabeth May: My point goes back to the idea of conflict of interest. What if...? I'm throwing this out, and I know I'm not supposed to do this, Mr. Chair, but if any witness waves at me, maybe we can see if anyone thinks this is a good idea.

Take aquaculture away from DFO and put it over in Agriculture and Agri-Food. Put DFO in charge of wild fishery, [*Technical difficulty—Editor*] coastal ecosystems and marine ecosystems in this country. Would taking aquaculture out of DFO's mandate be of any use in ending the conflict of interest?

Dr. Dadswell is waving at me. Go ahead,

Dr. Michael Dadswell: That's what they do in many countries besides Canada. That's almost always the case in places like Europe, north Africa and in the east. Most of the people who look after aquaculture are in agriculture.

● (1300)

Ms. Elizabeth May: Would you say that this would be a good idea for this committee to examine?

Dr. Michael Dadswell: Yes it would be. I think it's an excellent idea to examine.

Ms. Elizabeth May: Dr. Morton, you're waving your hand.

Ms. Alexandra Morton: You have to get the industry out of the ocean, because if you have a powerful agriculture branch now promoting it being in the ocean, I think we'll remain in deadlock, and wild salmon just don't have that time left.

Ms. Elizabeth May: However, moving them on land or to closed-containment, and giving them over to agriculture and food production might work?

Ms. Alexandra Morton: Sure.

Dr. Michael Dadswell: I agree with that.

Ms. Elizabeth May: Thank you, Mr. Chair. I'm sure I've used up all of Mr. Morrissey's time.

Thank you very much.

The Chair: You managed to turn two minutes into about three. You're the only person I know who can control time like that. You create time.

That concludes our session. I want to say a big thank you to our witnesses who appeared today and shared their knowledge with us.

Thank you to our translation team, our analysts, our clerk and everybody who had anything to do to make this meeting a success.

The meeting is adjourned.