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Chair

Mr. Scott Simms

Standing Committee on Fisheries and Oceans

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● (1530)

[*English*]

The Chair (Mr. Scott Simms (Coast of Bays—Central—Notre Dame, Lib.)): I call the meeting to order.

Welcome back, committee members.

Welcome to our guests today.

Meeting number 13 is pursuant to Standing Order 108(2), the study on wild Atlantic salmon in eastern Canada.

We are going to start with the presentations by our guests. We have four of them.

We're going to start with both our guests, who are appearing by video conference. From the Department of Fisheries and Oceans, we have Greg Roach, and from the Bluenose Coastal Action Foundation, we have Brooke Nodding.

From Dalhousie University, and no stranger to committee work, is Jeffrey Hutchings, professor of fish ecology and evolution, department of biology, and from the Atlantic Salmon Federation, we have Bill Taylor, president.

It's good to see all four of you.

As I said, you'll each have 10-minute presentations. Feel free to shorten them if you wish. We tend to run out of time on this committee.

We will start with Mr. Roach from DFO.

Mr. Greg Roach (Chair, Minister's Advisory Committee on Wild Atlantic Salmon, Department of Fisheries and Oceans): First, for clarification, I am Greg Roach, but I am not with DFO. I was the chair of the minister's advisory committee.

I'm very pleased to see that the standing committee is paying attention and putting some focus on wild Atlantic salmon. It's certainly needed. I will give an overview of the minister's advisory committee on Atlantic salmon, the processes it involved, and the recommendations that it made.

I'll give a little background. As I'm sure you are well aware, the salmon resource has been declining for some time. There have been a lot of pressures on it, starting with early fisheries and early disruptions to the environment and the habitat, followed by the damming of rivers through hydro dams and mill dams. Then recently, into the 1980s, there were acid rain problems, and then in more recent times we saw extreme declines in some of our major rivers, including the Miramichi. In fact, in 2014 only 30% of the rivers that were measured met the spawning escapement, and the Miramichi was particularly hard hit, so Minister Shea announced the establishment of the ministerial advisory committee on Atlantic salmon, which I will report on today.

The committee had a chair and a vice-chair, plus nine members. There were two members from Nova Scotia, two from Newfoundland and Labrador, two from New Brunswick, one from P.E.I., and two from Quebec.

The members had vast experience in wild Atlantic salmon. Some of them had spent their entire careers working in that field, and others were involved through volunteer organizations or were active members in stewardship initiatives. The committee in its own right had a lot of expertise, but even with that, we were instructed to get input from external sources: stakeholders, partners in the different areas, plus other science and resource expertise.

We held consultation sessions in Halifax, Moncton, and St. John's, with video links to Goose Bay in Labrador and to Quebec City. In each of those areas we also heard from specific expert groups, DFO scientists, non-governmental organization scientists, university scientists, and other organizations that had professional expertise that they could provide to the committee. We wanted to hear from anyone who had expertise and insight into what was going on with the wild Atlantic salmon and some of the things that might be done to improve wild Atlantic salmon.

While it was quite wide open, we had a very specific mandate. We were told we had to target areas that included conservation. In conservation, we talked about habitat improvement, fishing mortality, stock enhancement, and aquaculture.

Enforcement was another mandate. We were to look at deterrence through enforcement and compliance and also through education and information exchange.

The next area of our mandate was predation. The key species that we looked at here included grey seals, striped bass, sea birds, and smallmouth bass. We also spoke about science, and in this area we looked at knowledge gaps, particularly focusing on stock assessment, data collection, partnerships with other scientific organizations, ocean tracking and ocean issues, water quality, and aquaculture interactions.

We put some focus on national fisheries, specifically with the Greenland fisheries and also the Saint Pierre and Miquelon fishery. We had a catch-all area we called “other considerations”.

As we started through the consultations, many very good ideas were put before the committee, so we decided to include the category of "other" to capture some of these that we thought were pertinent to the things that needed to be done for wild Atlantic salmon.

To quickly go through the recommendations, the committee made 61. That's a lot. We tried to prioritize them, but there was consensus on all these recommendations and a desire to make sure they were recorded, so we put forward all the recommendations. We kept the recommendations under the mandate areas—for example, conservation. I'm sure you folks have the report from the ministerial fisheries advisory committee, so I'll highlight them.

● (1535)

The big one for conservation is additional investment in habitat and science. Habitat improvement was a major one. We believe that a lot of activities in the open ocean may be difficult at this time to address, with the exception maybe of fish mortality, mainly because we don't know a lot of this information, but we do know some of the impacts on the habitat in the coastal river areas, so we can make some significant differences by working there.

We looked at collaboration with the provinces to address habitat issues through existing regulations and existing land use practices. We talked about recommendations using the scientific approach—what they call the precautionary approach—for the harvest in the recreational fishery. We looked at recommendations to reduce the mortality from net fisheries by non-first nations fisheries. There are still a number of fisheries taking place in which there is a bycatch of Atlantic salmon, and we wanted to have that issue addressed.

We put forward a number of recommendations for first nations fisheries. We recognized the rights for food, social, and ceremonial fisheries, but put forward some recommendations to address possible take-out periods for some of the nets, net camping as an important concept, the positioning of the nets to put them close to the mouths of the rivers so that they wouldn't intercept fish that were destined for other rivers as they were transiting through an area, and also perhaps the use of fish traps instead of nets so that they could select the species or the size of the fish and also keep the fish alive before they're harvested.

We also talked about some collaboration on regulatory issues to work towards best land use practices and regulations for aquaculture.

Enforcement is pretty straightforward. We suggested there should be increased enforcement capacity and increased partnerships to make the enforcement more efficient. We also talked about education programs to get information out to the general public.

On predation, in relation to grey seals and striped bass we talked about increasing the research to figure out what the impacts were and also about increasing the harvest through, perhaps, some fisheries for grey seals, perhaps with first nations. Also we talked about increasing the recreational fishery and first nation fisheries for striped bass, in addition to doing the research.

In the case of seabirds, we focused on looking at the impact, so more research would be needed there.

Finally, concerning smallmouth bass, particularly in the Miramichi region, there's a population in Miramichi Lake that is of concern, so we recommended some steps on that front.

In the science recommendations we talked about improving data collection, improving collaboration among the different scientific groups, and improving the stock assessments. There are a number of rivers that are assessed every year. In the case of some, it's not clear whether the funding would even be continued, so we talked about shoring up the funding for existing rivers and adding some additional rivers.

There are many partners that can help with the science, and DFO doesn't have to be the lead on all partnerships, so we strongly recommended increasing partnerships for data collection in the river systems and moving forward on that front.

On the international fisheries, we put interim recommendations forward to basically work with international parties—with Denmark and Greenland, particularly, for the Greenland fisheries, along with NASCO, and with France and Saint Pierre and Miquelon to have a look at that fishery. It's somewhat concerning to have a commercial fishery intercepting salmon destined for Canadian rivers off Saint Pierre and Miquelon when the fisheries are closed in other areas where those fish are heading.

There are a number of other recommendations as well, the key one being the review of the wild Atlantic salmon policy. There are many recommendations and components in it that are touched by the recommendations we made.

The bottom line is that we have a number of partnerships and a number of players who are ready to work in this area, but there is a need for additional investment and some more initiatives from DFO.

Wild salmon is a very valued resource in Atlantic Canada. We need new investment to address the concerns, so we proposed the establishment of a wild salmon research and innovation fund. It would support science. It would support habitat improvements and other initiatives. It would leverage other programs and utilize our research partners and volunteer partners who are out there.

● (1540)

To help coordinate this work, we also recommended the establishment of an Atlantic salmon scientific research and development group. That group would basically coordinate the science and share data and information.

The research fund being proposed, then, would be a 10-year program, with an arm's-length group to act as oversight to ensure that the resources were used for the priority areas.

That's the summary. Thank you very much.

The Chair: Thank you, Mr. Roach. To prevent any confusion, Mr. Roach is chair of the minister's advisory committee on wild Atlantic salmon.

Now we have Bluenose Coastal Action Foundation's executive director, Ms. Brooke Nodding.

Please go ahead, Ms. Nodding.

Ms. Brooke Nodding (Executive Director, Bluenose Coastal Action Foundation): For starters, I'd like to say thank you to the committee and in particular to my MP, Bernadette Jordan, for inviting me to participate in this meeting to discuss the state of Atlantic salmon. It's an honour to be included, and I'm grateful for the opportunity to share some of my thoughts, concerns, and ideas about this important species with the committee.

As mentioned, my name is Brooke Nodding, and I am the executive director of Bluenose Coastal Action Foundation. We're located in Lunenburg, Nova Scotia.

Coastal Action is a community-based charitable organization with a mandate to address the environmental concerns along the south shore region of Nova Scotia. The organization's goal is to promote the restoration, enhancement, and conservation of our ecosystem through research, education, and action.

Coastal Action has been an established member of the Lunenburg County community since its inception in December of 1993, and I have been leading the organization as executive director since April of 2001. Over the past 20-plus years, Coastal Action has successfully completed a vast number of projects within the south shore region of the province. Project themes have included such issues as river restoration; water quality monitoring; fisheries research; endangered species projects addressing the roseate tern, Atlantic whitefish, Atlantic salmon, and American eel; marine protected areas; microplastics and marine debris; climate change and pollution prevention initiatives; and clean boating. Those are just to name a few.

I'm here today specifically to talk to the plight of the Southern Upland Atlantic salmon, one of five designatable units of Atlantic salmon found in Nova Scotia. This population assemblage can be found in watersheds extending from the northeastern mainland near Canso along both the eastern and south shore regions of the province and into the Bay of Fundy southwest of Cape Split, an area covering a little more than half of Nova Scotia.

Historically, Southern Upland salmon have been known to exist in at least 72 different watersheds within this region. The South Upland designatable unit was assessed by the committee on the status of endangered wildlife in Canada as endangered in November of 2010 and is currently under review for listing on schedule 1 through the federal Species at Risk Act.

Based on genetic evidence, regional geography, and differences in life history characteristics, the Southern Upland designatable unit is considered to be biologically unique and would be an irreplaceable loss of Atlantic salmon biodiversity if extirpation or extinction were to occur.

Much of the data on the status and trends of Southern Upland salmon come from the two indexed rivers in the province, the LaHave River located in Lunenburg County and the St. Mary's River located in Guysborough County. Similar to the case with all other Atlantic salmon populations, Southern Upland salmon numbers have experienced a drastic decline from the numbers observed in the 1980s and even the 1990s. Population modelling for salmon in both the LaHave and St. Mary's Rivers indicates a high probability of extirpation—87% and 73% respectively—within the next 50 years in the absence of human intervention or a change in survival rates for some other reason.

Threats to the species have been identified through the recent recovery potential assessment exercise conducted by DFO in 2013. These include acidification, altered hydrology, invasive species, traditional stocking methods, habitat fragmentation, illegal fishing and poaching, aquaculture, and marine ecosystem changes. It is important to note that addressing any one of these threats in isolation will not likely lead to positive population gains. A broad recovery plan addressing multiple threats would be a far more effective approach.

In response to public concerns around DFO's involvement in recovery efforts for the Southern Upland salmon, a meeting was held in June, 2013, involving both DFO representatives and invited stakeholders. As a result of this meeting, the Southern Upland salmon collaborative project's working group was established to identify internal and external client issues and priorities for Southern Upland salmon and to determine which of these would benefit most from collaboration with DFO population ecology division staff and how these collaborations could be accommodated, given current resources. The role of the working group was to focus on scientific projects associated with research, monitoring, data management, and advice with regard to conservation efforts aimed at the species.

From this working group, a list of 13 priority Southern Upland salmon rivers was developed and a number of subcommittees formed. The 13 priority rivers were chosen based on the following criteria: salmon were present in the river, based on the latest electrofishing survey results; the population primarily consisted of a wild native strain of salmon; there remained a relatively good pH in the system; there was an active community group in the area; the river had ample available rearing habitat; and it contributed to a diverse group of priority watersheds.

The subcommittees were developed to address the priority threats as identified by the stakeholder groups and included the following: habitat fragmentation, acidification, estuarine survival, and water quality.

● (1545)

In addition to these priority threats, projects were developed around supportive rearing. There's a kelt rejuvenation project in the St. Mary's system and and a proposal on invasive species for the LaHave River.

Based on what we know about Atlantic salmon in the Atlantic region, the time to act is now. The Southern Upland designatable unit, or DU, if let alone, is in serious trouble. Presently there are still large enough numbers of fish remaining in the wild to achieve recovery targets, keeping intact the genetic diversity of the population.

There exists an external capacity to conduct research and carry out projects outside of DFO through established membership of the Southern Upland Collaborative Projects Working Group. There are active projects going on in some of the identified priority watersheds that could be expanded or improved upon with more resources.

However, all of this capacity and momentum could easily be lost without a renewed commitment from the federal government and without adequate resources directed towards both research and conservation restoration activities. Cuts to DFO science have significantly reduced DFO's ability to address any of the larger Atlantic salmon research questions. The trend of cutting resources in the face of declining population numbers must be reversed if we are serious about the recovery of the Southern Upland salmon. Additional resources prior to the listing of a species could go a long way in preventing Southern Upland salmon from experiencing the same fate as their closest neighbours, the inner Bay of Fundy Atlantic salmon.

The recreational fisheries conservation partnerships program, the RFCPP, allows for groups to deliver important on-the-ground habitat improvement projects. However, the program does have its shortcomings, in that it does not allow for monitoring activities and is extremely strict around the amount of funds that can be allocated to planning activities.

Although the RFCPP funds can be used for chemical manipulation projects, the limited scope of the program makes it unrealistic for many of the acid mitigation projects and solutions being proposed for the Southern Upland region of Nova Scotia. A review of this program to address some of these issues would be beneficial and help with the larger recovery efforts for the Southern Upland salmon.

In conclusion, the window of opportunity for recovery of the Southern Upland salmon is rapidly closing.

There are many important initiatives ongoing that continue to need support and resources: the liming project on the West River Sheet Harbour, the catchment liming pilot project in Gold River, the aluminum toxicity work being done on various rivers across the Southern Upland region, large-scale habitat restoration efforts and the kelt rejuvenation project in St. Mary's River, and the proposed invasive species work on the LaHave River.

Let's all work towards achieving a positive result for Atlantic salmon by being proactive in our approach to dealing with the Southern Upland salmon before is becomes a federally listed species.

Thank you.

● (1550)

The Chair: Thank you, Ms. Nodding.

Now we'll go to Dr. Hutchings. You have 10 minutes, please.

Dr. Jeffrey A. Hutchings (Professor of Biology, Canada Research Chair in Marine Conservation and Biodiversity, Dalhousie University, As an Individual): Thank you very much, Mr. Chairman, and thanks to the members of the committee for this invitation to come and speak to you today.

I won't say everything that I've provided in my brief to you because a lot of it is about basic elements of biology, but it's there for your interest and perusal.

My experience with Atlantic salmon began in 1982 during my master's research in Newfoundland in two rivers and two ponds in Terra Nova National Park. Since then, I've accumulated 34 years of research experience on wild Atlantic salmon, and I also have 27 years of experience working on the consequences of interactions between wild and farmed salmon.

In addition to my research experience, I've held positions with responsibility to provide science advice. These have included being chair of the Committee on the Status of Endangered Wildlife in Canada, or COSEWIC. I've also chaired a Royal Society of Canada expert panel on sustaining Canada's marine biodiversity with respect to fisheries, aquiculture, and climate change. I've had the pleasure to be able to present testimony to this committee and the Standing Senate Committee on Fisheries and Oceans over the last 20 years. I'm currently a member of the scientific advisory committee on the Atlantic Salmon Conservation Foundation and I've served as independent reviewer of recovery plans for several endangered Pacific salmon for the United States National Marine Fisheries Service.

There are about 34,000 species of fish in the world. Of these 34,000, the life history variation expressed by Atlantic salmon is actually matched by relatively few other species. Atlantic salmon might well express more life history variation than almost any other fish in Canada. It is thus emblematic of the richness of Canadian aquatic biodiversity, but the richness and diversity of wild Atlantic salmon, as the committee is aware, is under considerable threat, particularly in the southern parts of its range. Salmon have been extinct in Lake Ontario for more than a century, and they no longer spawn in many rivers in the Maritimes.

COSEWIC, the national science advisory body to the Minister of the Environment on species at risk, has assessed six units of Atlantic salmon as being either endangered or threatened: south Newfoundland; Anticosti Island; eastern Cape Breton; Southern Uplands, which Brooke just talked about; inner Bay of Fundy; and outer Bay of Fundy. From a science perspective, I think it's fair to say there is consensus that the primary threats to most endangered and threatened wild Atlantic salmon in eastern Canada include partial and full barriers to migration such as dams; illegal fishing, which we've already heard about; and deterioration in habitat quality in some rivers.

In the marine environment, we almost certainly have had some shifts in oceanographic conditions and likely in ecosystem structure that have altered the interactions between species from a predator-prey perspective, and possibly in terms of competition for food. We also, in the coastal marine environment, have issues related to aquaculture operations.

However, of key importance from a recovery perspective is the fact that almost all endangered Atlantic salmon have declined by more than 90%, some even more so, when compared to their maximum recorded abundances. Declines of this extent can lead to unduly prolonged and increasingly uncertain recovery. Such massive depletions draw attention to a central tenet in population biology: small populations are more vulnerable to unexpected natural and human-induced change than large populations. Another way of putting this is that within the context of endangered and threatened wild Atlantic salmon, every fish counts in many of these rivers.

By focusing on the small, absolute numbers of salmon—often there are tens of adults returning to many of these rivers—attention is drawn to the possibility that the marine environment might not have changed quite to the extent that is sometimes hypothesized. Rather, perhaps what has changed is the ability of depleted salmon populations to persist in the face of environmental conditions in which considerably larger populations might have been able to persist in the past.

I've suggested five courses of action from a science perspective.

The first would be to accept COSEWIC's science advice to list Atlantic salmon under the Species At Risk Act. The listing of salmon under SARA would initiate legal requirements to prepare and enact recovery strategies and associated action plans.

The second would be to take measures to expand the quantity and quality of Atlantic salmon habitat in fresh water by mitigating partial and complete barriers to salmon migration, and perhaps by expanding existing initiatives to improve salmon habitat and stewardship.

The third would be to reduce and ideally eliminate illegal fishing, as has already been mentioned. Even if the absolute numbers of salmon that are poached or illegally caught is small, the proportional effects on very small populations can be quite large.

● (1555)

Number four would be to reduce threats to wild salmon posed by salmonid aquaculture. In this case, the viability of severely depleted populations can be negatively affected by unintended consequences of aquaculture operations, including interbreeding between wild salmon and farmed escapees, which has been reported in 54 rivers and bays in eastern Canada, and the exchange of pathogens and disease, although that latter point is perhaps not as well scientifically substantiated for Atlantic salmon as is the former.

Last, I suggest from a science perspective to take a very broad generic, theoretical approach, a modelling approach, to identify a model that would incorporate all available information on Atlantic salmon throughout its range to identify survival bottlenecks at various regional and population scales, thus strengthening the science advice associated with potential mitigation strategies.

To sum up, then, I would see the following general pattern. As we move from north to south, from Newfoundland and Labrador south to the Maritimes, we see an increased risk of extinction. We see a reduction in the survival from the smolt stage to the returning adult stage. We see an increased level of habitat alteration and fragmentation in fresh water. We see an increase in marine and freshwater water temperatures. We see an increase in the number and density of salmonid aquaculture sites, and from a marine ecosystem perspective, we also see shifts away from the larger demersal or bottom-dwelling groundfish, such as cod, to ecosystems that are increasingly dominated by small mid-water or pelagic species such as herring, and this might well have consequences for the food supply of salmon smolts.

With that, I'd like to close. I'd be happy to address any comments and questions that might arise.

Thank you, Mr. Chair.

The Chair: Thank you, Dr. Hutchings. Once again I appreciate your input.

Next is Mr. Taylor, from the Atlantic Salmon Federation. Please go ahead for 10 minutes or less.

Mr. Bill Taylor (President, Atlantic Salmon Federation): Thank you, Mr. Chairman and committee members.

I'm here representing the Atlantic Salmon Federation. The Atlantic Salmon Federation been around since 1948. We are well aware of the many issues confronting wild Atlantic salmon and have some ideas about potential solutions as well.

We carry out our own research, advocacy, public awareness, and community outreach activities. We're incorporated as a charity both in Canada and in the United States. We have seven regional councils representing 125 local grassroots organizations and over 25,000 members throughout the salmon's range in eastern North America. Our headquarters are in St. Andrews, New Brunswick, and we have regional offices in New Brunswick, Nova Scotia, Quebec, Newfoundland and Labrador, and the State of Maine.

We have a long history in salmon conservation, research, and restoration. All of our policies and positions are science-based. We are internationally recognized for our research capabilities, have published many peer-reviewed scientific articles, and are invited to participate in scientific exchanges locally, nationally, and internationally.

The ASF has scientific representation on the working group of the International Council for the Exploration of the Sea, ICES, which provides advice to the North Atlantic Salmon Conservation Organization, NASCO. We are also delegates on the U.S. and Canadian delegations to NASCO and provide leadership to the accredited 35 international NGOs to NASCO.

Our main research programs are on marine survival of Atlantic salmon and interactions between wild salmon and farmed escapees. We have data from more than a decade of research that has tracked migrating salmon—smolt and adults—more than 1,000 kilometres, from the Miramichi, the Restigouche, and the Grand Cascapedia all the way to the Strait of Belle Isle.

As for the issues facing wild Atlantic salmon, there are many. With the threats facing wild Atlantic salmon, it's death by a thousand cuts. The ASF has worked very closely with provincial, state, federal, and international governments to push for action that would protect this species. There have been good years and bad years for Atlantic salmon runs, and there have been highs and lows. What's obvious, though, is that the lows are getting lower year after year, and that was certainly the case in 2014, when it was a crisis situation, particularly in the Maritimes.

Salmon, as already has been mentioned, are especially at risk in the southern range. When that became apparent in the severe decline in the Miramichi in 2014, people became very vocal and urged government to action. Former minister Gail Shea responded quickly to the crisis by appointing the ministerial advisory committee, which I co-chaired with Greg Roach.

The committee's 61 recommendations were presented to DFO almost a year ago. I am hopeful that the federal government is prepared to move ahead on many of them. There was some good news yesterday when Minister Tootoo announced the funding for research in marine assessment and freshwater assessment, as there was with the extension earlier this year by the Gulf Region DFO for the total release of angled salmon in the Maritimes, and also in Quebec's recent announcement on its recreational fisheries management plan, where live release is fundamental to that program this year as well.

To restore wild Atlantic salmon, though, we must deal with all of the challenges facing the species throughout its life cycle. The ASF has developed programs by concentrating on priority goals that are aimed at attaining environmentally sustainable salmon aquaculture, shedding light on the causes of low marine survival, promoting sustainable freshwater fisheries, protecting the Atlantic salmon's freshwater habitat, and protecting migrating salmon from unsustainable fisheries at sea. We appeal to the federal government to provide resources and implement the policies that support wild Atlantic salmon throughout their entire life cycle.

On the subject of environmentally sustainable salmon aquaculture, marine-based net-pen salmon aquaculture has grown extensively along the Atlantic coast, and there is a growing awareness of the negative effects on wild salmon populations. One of the most comprehensive peer-reviewed studies of aquaculture interactions on wild salmon confirmed that globally there is a much steeper decline in numbers of wild salmon living in rivers that are close to salmon farming.

DFO has identified ocean-based net-pen salmon aquaculture as a marine threat to the wild populations in the inner Bay of Fundy region, which were listed as endangered under the federal Species at Risk Act in 2003. The wild populations in the outer Bay of Fundy and along the Atlantic coast of Nova Scotia have been designated by COSEWIC as endangered, and on the south coast of Newfoundland as threatened. DFO's recovery potential assessments for the potential listing of these populations consistently identify that salmon aquaculture is a high-level threat.

Government must recognize that salmon farming as practised today is not sustainable, and it must take leadership in moving the industry to closed containment facilities as one alternative. Until such time as operations can be fully implemented towards closed containment, marine-based net-pen salmon aquaculture must be held to the highest standards possible.

● (1600)

There is no consistency in Canada in regulation of aquaculture in Atlantic Canada—so Newfoundland, New Brunswick, and Nova Scotia all have different approaches and standards—and the industry will voluntarily raise the standards in their operations only when it affects the bottom line. The cost and impact of the bottom line are the ultimate situation here, and governments must ensure not only that standards are in place but also that they are enforced.

On promoting sustainable freshwater fisheries, both angling and first nations, ASF wants to commend Fisheries and Oceans for renewing their restriction to live release only in the recreational fishery for Maritimes this year. That was implemented on the advice of the ministerial advisory committee. I also want to commend Quebec for its Atlantic salmon management plan this year, with a new emphasis on live release and river-by-river management.

In Quebec, though, unfortunately, while the Quebec government wanted to reduce the season harvest this year and reduce the number of tags from seven to four, and from seven large fish tags to only one large fish tag and three tags for grilse, that could not be done because it requires a legislative change by DFO, so hopefully we can see that in place for 2017.

I can't emphasize enough the importance of introducing improved precautionary fisheries management measures throughout the entire life cycle of salmon. That includes our first nations fisheries and other jurisdictions such as Greenland and St. Pierre and Miquelon.

There are first nations who are leaders in using trap nets that allow the live release of large salmon, large female spawners, and these initiatives need to be well supported and promoted by DFO with a view to expansion.

Improved management of all Atlantic salmon fisheries in Canada is essential in negotiating reduced harvest at Greenland, both within NASCO and in bilateral discussions. In NASCO's process to improve Greenland's monitoring and control of its fisheries, the salmon fisheries management of other NASCO nations like Canada comes under scrutiny. To show real leadership, we must immediately take steps to improve our own salmon management practices.

Greenland is making an effort, and all of its fishermen must now report accurately all of their catches, even if their catch was zero. On the other hand, our harvest and our reporting is inadequate. In some areas there is no reporting of catches of first nations fisheries at all. In New Brunswick, as an example of the angling fishery, less than 10% of anglers actually report their catch.

To manage in a precautionary manner, it's important to restrict salmon fisheries to in-river, allowing harvest only when salmon populations are known to be well above their minimum conservation limits, and to reach this goal it's important to utilize live release in the recreational fishery and selective trap nets in first nations fisheries. The quickest action that Canada can take is the decision to base harvest management on science and the precautionary approach and to ensure that management measures are upheld through effective monitoring and enforcement. At the very least, there should be no harvest of salmon for populations that are not surpassing their minimum conservation limits.

I encourage DFO to study Quebec's river-by-river management model and introduce a similar approach, perhaps on a pilot basis, on one or two rivers in Atlantic Canada as quickly as possible.

With respect to enforcement, effective enforcement is important to ensure that the benefits of increased conservation measures are not put in jeopardy and to protect the significant benefits to the economy of the recreational fishing industry. A recent study by Gardner Pinfold in 2010 determined that Atlantic salmon are key economic generators in eastern Canada. Gardner Pinfold evaluated the GDP value of wild Atlantic salmon in 2010 to the Atlantic provinces and Quebec at $150 million, $130 million of which was directly attributable to the recreational salmon fishery. Spending on wild Atlantic salmon supported almost 4,000 full-time equivalent jobs in 2010, and 3,300 of those jobs were in the recreational fishing industry.

Wild Atlantic salmon support important first nations fisheries, a lucrative recreational fishing industry, and important jobs in rural areas. From 1985 to 2009, there was a 75% decrease relative to inflation in DFO's budget for wild Atlantic salmon conservation, assessment, and enforcement—from $24 million to $12 million during that period—so at a time when our wild Atlantic salmon needed the most help, DFO had the fewest resources to do its jobs.

With respect to research and innovation—and Chair, Greg Roach spoke to the recommendation of the advisory committee on that—it's of the utmost importance to ensure that freshwater conditions are optimized to produce the largest number of young salmon going out to sea, the salmon smolts.

● (1605)

It's critical that Canada take the leadership role in initiating a multi-partner approach to researching salmon survival at sea and behavioural patterns of the species in its marine environment so they can better understand the effects of changing predator and prey behaviours and abundance, and the impact of climate change on production.

The survival of Atlantic salmon in the marine environment has declined significantly in the last thirty years. The poor runs of 2012 and 2014 emphasize the need to understand what's happening during the salmon's migration at sea.

ASF has been tracking salmon migrating from the Miramichi, Restigouche, and Grand Cascapedia since 2003. We have a well-established time series showing the migratory patterns of salmon through estuaries and bays as far as the Cabot Strait and the Strait of Belle Isle. The research is providing important data to guide management measures and is identifying critical habitat and situations like predation.

This work will be successful when we are able to track salmon all the way to Greenland and back. Expansion of this research requires an international effort and leadership by Canada and the U.S., working closely with Greenland, to expand tracking in North America and tagging and sampling at Greenland.

An important partnership that combines both restoration of wild Atlantic salmon in fresh water and research into marine mortality is taking place in New Brunswick under Collaboration for Atlantic Salmon Tomorrow, or CAST. CAST is an ambitious and innovative approach to recovering wild Atlantic salmon populations that is focused on the Miramichi and Restigouche Rivers. Utilizing state-of-the art assessment, habitat protection, research, and enhancement technologies, it is a blueprint for other salmon rivers.

● (1610)

The Chair: Mr. Taylor, pardon the expression. I hate to interrupt you in midstream, but can I ask you to summarize in a minute or less?

Mr. Bill Taylor: You can. I'm coming into the home stretch here.

The Chair: My apologies.

Mr. Bill Taylor: CAST has industry partners and conservation organizations and universities working to recover the species using state-of-the art innovative technologies, and it could be a blueprint for other areas.

There are two last points to emphasize. As has already been said, we need to get the wild Atlantic salmon policy in place and working. That needs to be a fundamental priority. At DFO, it needs to be implemented immediately, and well funded. As well, there's the Greenland fishery: all of the large spawners of Canadian origin spend the winters feeding at Greenland. Greenland last year harvested 58 tonnes of salmon; in Canada, we harvested 130 tonnes of salmon. We have to practice what we preach.

With that, Mr. Chairman, I would be happy to entertain any questions.

The Chair: Thank you, Mr. Taylor, and thank you to all of our guests.

We'll proceed as we normally do, and some of you may be acquainted with this. I would like to say hello to Mr. May, who joins us as a special guest today. Thank you for joining us.

We're going to start with the Liberal side for seven minutes.

We're going to start with you , Mr. Finnigan.

Mr. Pat Finnigan (Miramichi—Grand Lake, Lib.): Thank you, Mr. Chair. Thank you to the panel for taking your valuable time to come and present to us today. We really appreciate it.

My question could be to anyone of the panel, and maybe specifically to Mr. Taylor, because his speech is more fresh in my mind.

I think all of you have mentioned that science and data collection are the key to understanding salmon and making sure that our practices will enhance and protect the species.

Regarding the announcement yesterday, I know that your association, Mr. Taylor, reacted very positively to it. As you stated, the last eight to 10 years have been very detrimental, in the sense that a lot of research money was reduced. You've quoted it going from a $24 million investment in salmon to $12 million. Also, there were a lot of scientists whom we've lost over that time. How important was that announcement yesterday of 135 new scientists being hired, and what does that mean for your efforts in conserving salmon in the future?

Mr. Bill Taylor: Thank you.

Certainly we're encouraged by the news. The announcement yesterday may have been short on detail, but it's $197.1 million over the next several years, and Atlantic salmon were specifically mentioned in the announcement, as was the need for more marine research and freshwater assessment. That's all good news, so we're encouraged.

I really can't speak to anything specific, because there were no details or few details, but I'm encouraged and I'm looking forward to the 135 new scientists. We certainly hope that a good chunk of that $197.1 million will be focused on Atlantic salmon and on the 800-pound gorilla in the room, which is the at-sea survival issue.

Mr. Pat Finnigan: That was part of the discussion we had on Monday with the staff from DFO, stating that the big question.... I guess there is something in the water. From here to Greenland, there is something happening to the salmon that we don't totally understand. Would you say that investing in monitoring equipment, acoustic equipment, and that kind of technology, is important to the preservation and to understanding it?

Mr. Bill Taylor: I'd say it's very important, but I'd also say, as I mentioned a few times in my presentation, that we have to focus our conservation efforts, our restoration efforts, on the entire life cycle of the Atlantic salmon, and that means in fresh water as well as in the marine environment. As I said earlier, it's death by a thousand cuts. There is no silver bullet.

There are likely a number of factors in the marine environment. There are changing predator-prey relationships. There are changing ocean temperatures. There is changing salinity. There's over-harvesting at St. Pierre and Miquelon. There's over-harvesting at Greenland. There's no one issue, but until we actually know what those problems are....

The only way to find out is through a concerted, well-funded, multi-partner effort. Canada should not do it on its own. We should be working closely with the United States. We should be working closely with the ocean tracking network at Dalhousie University. We should be working closely with NGOs, such as the Atlantic Salmon Federation, that can bring resources and scientific expertise, and we should be working with NASCO, under the auspices of the International Atlantic Salmon Research Board.

If we would do more as far as partnerships, collaboration, and pooling of resources go, I think we would stand the best chance of figuring out what the problems are and then hopefully being able to do something about them. Until we know what the issues are in the marine environment, we have to do as much as we possibly can to make sure our rivers are in the best shape possible and are sending out as many young salmon or smolt as possible into that marine environment.

● (1615)

Mr. Pat Finnigan: Thank you.

I invite the others to comment also.

Regarding what they call the CAST, or Collaboration for Atlantic Salmon Tomorrow, I know the original announcement caught everybody by surprise. They would not be able to, at first, harvest the smolts, or the number of smolts they wanted to. Then finally, I think, they agreed that we could catch as many as 5,000 per river.

Can you elaborate on that and on how important that is? I know there are concerns.

Mr. Taylor, are we contemplating eventually shutting down a river to stop the salmon from migrating? Would that be an option eventually, to protect it from the sea predators? Could you elaborate on that?

Mr. Bill Taylor: I'll speak to CAST first, but if I don't completely answer your question, maybe you could rephrase it for me.

CAST, Collaboration for Atlantic Salmon Tomorrow, is a collaboration of industry partners: J.D. Irving Limited, Cooke Aquaculture, International Paper, NGOs such as the Atlantic Salmon Federation, the Miramichi Salmon Association, the University of New Brunswick, DFO, the Canadian Rivers Institute, and others.

It is a program that is still waiting for funding. A lot of private money has been put into it so far. Hopefully, we're going to have some good news from the federal government and ACOA. It's a $15-million program over six or seven years. There are many elements to it. It's habitat improvement. It's identifying cold water refugia and protecting the cold water refugia. It's better assessment.

Then there is the innovative enhancement strategy that you spoke about, Mr. Finnigan. That is on the northwest Miramichi, which is the branch of the Miramichi that is in the most trouble, which two years ago met only 20% of spawning escapement. It involves capturing wild smolts as they leave the northwest system in the spring and holding them in the Miramichi Salmon Association's hatchery, growing them to adults, and then releasing them naturally into the river so that they run up and find their own tributaries and their own mate, the idea being that you bypass what right now is an exceedingly low at-sea survival. That's a new technology for a river such as the Miramichi. It's been done on a small scale in rivers where there aren't wild salmon populations.

You're correct. The permits to collect 5,000 smolts were given. There needs to be a very rigid monitoring assessment research program so that we know.... Everyone believes it's going to be a good thing, a positive thing, but there are still some unanswered scientific questions.

There's an expert panel that includes DFO, scientists, and geneticists from both sides of the Atlantic that will hopefully help us develop that rigid monitoring program. If it's successful, which we believe it will be, it could be a blueprint that could be used to help other rivers to restore their wild runs.

Mr. Pat Finnigan: Maybe you could comment—

The Chair: Sorry, Mr. Finnigan, I have to cut you off there.

Thank you.

Mr. Sopuck, go ahead, please, for seven minutes.

Mr. Robert Sopuck (Dauphin—Swan River—Neepawa, CPC): Thank you.

One of the critical things is that we do the things we can do, that we know we need to do. I'm going to focus on a few.

In terms of freshwater habitat, the spawning habitat, the smolt-rearing habitat, apart from some of the issues you outlined, such as the issues with dams or warm water, can we say that by and large the freshwater habitats toward the northern part of the range are generally in good shape, or that if there are issues, they can be dealt with, as with some of the projects under the recreational fisheries conservation partnerships program?

Is that a fair comment, Dr. Hutchings?

Dr. Jeffrey A. Hutchings: Yes, I would think it a fair comment that as one goes further north, freshwater habitat issues are less of an issue.

Mr. Robert Sopuck: That's good.

The ones we have we can deal with through programs like the RFCPP, the cold water refugia stuff they did on the Miramichi, and so on. We can do real work that generates real results.

By and large, the issue is open ocean mortality, once the smolts leave the fresh water and when they come back.

● (1620)

Dr. Jeffrey A. Hutchings: By and large, yes. It's probably not the only one, but it's clearly a key one.

Mr. Robert Sopuck: Probably one of the major sources of mortality is predation in the open ocean. Is this right?

Dr. Jeffrey A. Hutchings: Could I answer that in two ways?

Mr. Robert Sopuck: Sure.

Dr. Jeffrey A. Hutchings: In the first instance, I think predation is an issue. The key question is how the imbalance arose. Now that we have so few salmon smolts leaving the rivers.... One can almost think of this as a threshold, and that salmon must pass a certain numerical threshold before they get above that bump.

Just to be cognizant of this, the other element, as I mentioned, is that as one goes further south there have been shifts in the marine fish community structure such that there are now more fish—such as herring, sand lance, and some other things—that are almost certainly competing with young salmon smolts for zooplankton, the key one being *Calanus finmarchicus*. There are more competitors in the marine—

Mr. Robert Sopuck: Right, but what I want to focus on.... Looking at the research results we have and doing the specific actions we can do, I don't think there's much we can do about the last item you mentioned.

I want to focus on the issue of striped bass in the Miramichi specifically. Mr. Roach's committee recommended a greatly expanded catch of striped bass. I have a study here from Maine called “Interactions between striped bass...and the conservation of Atlantic salmon....” In the abstract it says, “Moderate to strong correlations were found between estimates of striped bass abundance and the return of Atlantic salmon to three of the four major New England salmon [streams]....”

I gather that in the Miramichi, decades ago the striped bass were almost SARA-listed species, and now, based on Mr. Roach's committee study, we're up to some 250,000 adult spawning fish. The predation rates have to be very severe. I'm cognizant of your point, Dr. Hutchings, that these fish may be in a predator pit and can't get out of it because of this imbalance.

Mr. Roach's committee recommended an expanded catch of striped bass, but the department—and he used a very nice word in a bad way—became way too conservative. About 12,000 fish were taken. The season this year was two weeks long with retention of one fish a day. Clearly that kind of harvest of the striped bass could have absolutely no effect on smolt survival, given the predatory nature of striped bass.

Mr. Taylor, were you disappointed in the very conservative approach taken by DFO, which I think was in opposition to the recommendation of Mr. Roach's committee?

Mr. Bill Taylor: I was disappointed. The Atlantic Salmon Federation was disappointed. We have some data. It's not just an emotional response.

I mentioned in my presentation about the smolt tracking work and adult sonic tag tracking work that the Atlantic Salmon Federation is doing in the Miramichi, Restigouche, and Cascapedia. We've been tagging smolts on those three rivers since 2003, the last 12 or 13 years.

The survival rate of the smolt from the Grand Cascapedia and Restigouche rivers downriver and out through the bay and estuary in any given year ranges from 60% to 70%, yet on the Miramichi it's 25% to 30%. The major difference is the striped bass population.

You have the striped bass, which is the Gulf of St. Lawrence striped bass population from Gaspé to Cape Breton Island. They are in the Miramichi system in the spring. That's their spawning habitat. The numbers have increased considerably over the last number of years. There is strong evidence to suggest that their predation on outgoing smolts is probably quite high.

Mr. Robert Sopuck: To me, adaptive management is the right way to go. We institute a management program, let's say a vastly increased harvest of striped bass, and see what happens, and after two or three years of study we adjust accordingly. I detect, especially in the scientific community, a political correctness that almost is too reluctant to look at the issue of predator control as one of the tools in the tool kit, yet we're very quick to limit human predators when it comes to harvesting salmon, catch-and-release, and reduced limits. When it comes to fish predation from a vastly increased striped bass population, we somehow seem reluctant to do that. I certainly see no downside to doing it.

With regard to the Greenland catch of 58 tonnes, Mr. Taylor, you talked about how Canada's catch is twice as much, but based on the DFO testimony that was given to us earlier this week, all of their fish are large MSW fish, multi-sea-winter fish. All of them are the most valuable fish, so their 58 tonnes are 58 really important tonnes.

The other point is that they don't produce any salmon to speak of. They're basically taking fish that we produce, so I don't think we need to apologize for anything that Canada does, given our conservation efforts.

What recommendation would you have in terms of going to the Canadian government as a committee? What can we do to deal with Greenland, other than just sit around the table and talk and beg?

● (1625)

Mr. Bill Taylor: That's a very good question. I believe there is a lot you can do.

From past experience, in 1993-1994 the Atlantic Salmon Federation and the North Atlantic Salmon Fund NGO partner from Iceland actually paid the Greenlanders not to fish. We purchased their NASCO-negotiated quota of 158 tonnes and 213 tonnes for those two years. It was two years, and then it fell apart.

In another agreement in 2002-2011, we learned our lesson. The deal wasn't to pay fishermen not to fish; it was to invest in alternative economic development opportunities. We helped them to develop a lumpfish roe fishery and a snow crab fishery, the idea being to get salmon fishermen doing something else that was more sustainable and provided a livelihood as good as or better than salmon fishing.

There are opportunities, and we work closely with the U.S. government. We'd like to see that same partnership in Canada, not just working through NASCO but through bilateral discussions with Greenland. I guess, just to confirm your point, the difference is that all the salmon taken in Greenland are large salmon. In any given year, 80% to 90% of them are bound for Canadian rivers, so that's a point well made.

The Chair: Thank you, Mr. Taylor. We've run out of time.

For seven minutes, Mr. Donnelly, go ahead, please.

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

Thank you to all four of our witnesses for providing your testimony on this important subject of wild Atlantic salmon.

I will start with you, Mr. Taylor. You spoke about the precautionary approach in moving aquaculture to closed containment. My question is, if the salmon farming industry in the east coast moved to closed containment, do you think this would have a positive impact on wild Atlantic salmon?

Mr. Bill Taylor: The short answer is yes. Obviously it couldn't take place in a short period of time. The Atlantic Salmon Federation position is that there should be a moratorium immediately on any expansion of the industry, with a grandfather period, until closed containment on land or closed containment technologies in the ocean or along the coast....

The other point I made in the presentation was the standardization of a very rigid best practices model. If you look at the aquaculture regulations and compare New Brunswick to Nova Scotia to Newfoundland to British Columbia to Norway, they're all different. Norway has the highest standards, but even at that highest standard, there are still a zillion problems with the aquaculture industry in Norway. They admit that as well.

Mr. Fin Donnelly: Thanks, Mr. Taylor.

You mentioned Norway. I'm assuming you're familiar with their recent announcement of a U.S. $100 million investment into closed containment.

Mr. Bill Taylor: Absolutely.

Mr. Fin Donnelly: That will be one to watch.

Dr. Hutchings, you mentioned—I think I got it—five categories of suggestions. You talked about dams, illegal fishing, habitat, marine issues—of which there was more than one—and aquaculture. Is that the order of priority that you would place on those, or would you recommend a different order of priority?

Dr. Jeffrey A. Hutchings: From a science perspective, I tend to try to simplify things as well as I can. It helps me think about things.

As I said, there's a broad science consensus on the threats in fresh water and at sea. With respect to what's affecting Atlantic salmon, there are many things we can do and are doing from a freshwater habitat improvement perspective. I think there's more that can be done, but that would be an enhancement of ongoing activities that are taking place, everything from individuals and community groups to NGOs and government initiatives.

I also think there are things we can do at sea. I very much agree with the sentiments that have been expressed that if there was one key objective, it would be to maximize the number of smolts that are entering the ocean. That's money in the bank, basically.

We can't affect, for the most part, what's going on at sea except by controlling legal and illegal fishing activities and by having more means of mitigating some negative consequences associated with aquaculture.

I would say, number one, I very much agree with that. Maximize the number of smolts emigrating into the ocean. The second thing, from an at-sea mortality perspective, is that we need to know when and where salmon are going, and where the mortality is taking place.

Mortality is the key thing. I think there are prospects associated with the tagging of fish and the monitoring of salmon that let us know roughly where they go, but we don't know specifically where they go. We think much of the mortality happens as soon as these salmon that are about as big as this pen enter the ocean, or within a few months, but we don't know for certain. That is quite a black box.

What do we do about it? I think that's a secondary thing, but before we can even contemplate what we might be able to do, we need to know when and where in that at-sea life cycle the survival issues are taking place.

● (1630)

Mr. Fin Donnelly: Great. Thank you, Dr. Hutchings.

Ms. Nodding, you talked about a broad recovery plan. If I were to ask you to choose between a broad recovery plan versus addressing a top priority, which would you choose? In other words, if you couldn't get the broad plan, would you choose to wait and build up those funds to be able to address that plan, or would you just recommend picking away at a priority until we get the funding support or the investment, the resources, needed to do that broad plan?

Ms. Brooke Nodding: Obviously, something is better than nothing, so I wouldn't choose to do nothing and wait to get the resources for the broad plan, but picking off one of the priority actions in isolation is not going to solve the problem. You have to work towards solving all the issues to really see the recovery we would like to see for the Atlantic salmon.

No, I would not hold off and do nothing and wait to get the resources, which is why I mentioned, in terms of the Southern Upland salmon, that we know the species has not been listed federally yet, so we have a little time before it becomes a legal obligation, and before that happens, to really try to put some emphasis and be proactive on trying to delay that process or maybe trying to improve the status of the species before that happens.

The time is now to do something, and let's work towards solving one issue if we can. Realistically, you have to look at all them, but I would definitely not stop.

Mr. Fin Donnelly: Thank you.

Mr. Roach, in my remaining time, would you tackle that question of choosing your top priority? Your committee has given us 61 recommendations, which is excellent work, and you've talked about additional investments needed for habitat and science . What would your top priority be?

In other words, where do you think the federal government would get its biggest bang for its buck?

Mr. Greg Roach: I'm going to answer a little differently. Anyway, I'm going to try.

I think there's a lot of low-hanging fruit in those 61 recommendations. We did recommend reinvestment in Atlantic salmon, but there are lot of things that can be done that are not in need of additional funding.

I'm talking about things such as addressing existing commercial fisheries, and perhaps bait fisheries, for trap fishing for invertebrates or bycatch in other species. These fisheries go on there, and there's a very good probability that some of them intercept, if not target, Atlantic salmon. We can clean up on some of those fronts.

On data, there are a lot of opportunities for data that may not cost us additional money. For example, Bill mentioned the tag returns, the tag being the tag on your licence. There's very little return from the Maritimes and from Newfoundland on that, yet there's a lot of data that can be captured. The point is that it has to be formatted so that people can electronically put forward the information of what happened during their fishery. That can then be used to get a good handle on what's going on in the river system. That will be much more informative, I guess, than some of the information we have today.

For the big-money areas, that's difficult, because speaking for the committee, as much as I tried to get some prioritization of the areas, people didn't want to do that. I don't want to pre-empt the committee's word and start making them do it now, but I mentioned some examples—

● (1635)

The Chair: Mr. Roach?

Mr. Greg Roach: Yes?

The Chair: I'm sorry. Can I get you to tell us very quickly?

Mr. Greg Roach: I guess what I would say is that many of the recommendations we have in that report don't cost anything, such as enforcing existing regulations on the land use practices and using some of the data collection opportunities that are there. For those, we don't need to ask if we have to get money. Let's go for those first.

The Chair: Thank you.

We'll go to Ms. Jordan for seven minutes.

Mrs. Bernadette Jordan (South Shore—St. Margarets, Lib.): Thank you to the panel for your presentations.

My first comments are going to be for you, Ms. Nodding, particularly with regard to invasive species in the LaHave River. We know that the Petite Rivière water system has pretty much lost the Atlantic whitefish. That was mainly due to the chain pickerel and the closure of the Queens hatchery a couple of years ago. Is the chain pickerel actually an issue in the LaHave River, or is it another invasive species?

Ms. Brooke Nodding: No, it's there.

Mrs. Bernadette Jordan: It's there too?

Ms. Brooke Nodding: No, it's there. They have both bass and chain pickerel.

Mrs. Bernadette Jordan: Okay.

I grew up on the LaHave River, and it was very rare for us to see a seal. Now it's very rare if you don't see a seal in the LaHave River. Do you think they're also part of the problem on the LaHave?

Ms. Brooke Nodding: Yes, I do. We don't have any specific research on that ourselves. If you speak to the members of the LaHave River Salmon Association, you'll hear that it's one of their big beliefs that seals are a major problem with those returns to the LaHave.

Mrs. Bernadette Jordan: Do you think, then, that the primary invasive species are the chain pickerel and the smallmouth bass? You mentioned that there was an invasive species in the LaHave that might be causing a lot of the decline in the population. Is that the primary problem?

Ms. Brooke Nodding: Yes.

Mrs. Bernadette Jordan: I have another question for you. Are the initiatives you're working on right now being shared with other organizations and bodies across Atlantic Canada? If so, can you tell me a bit about that collaboration?

Ms. Brooke Nodding: Sure. Right now, a lot of the work we're doing on salmon is in partnering with other groups within the Southern Uplands region. I mentioned the Southern Uplands salmon collaborative working group with DFO. That's mainly the group that we're working with on salmon issues.

We do work on other species and we have other collaborations across the Atlantic region, using the former ACAP network, the Atlantic coastal action program network of groups that was formed in the early 1990s. We collaborate as a larger group on other issues across the Atlantic region.

Mrs. Bernadette Jordan: Thank you.

My next question is for you, Mr. Roach.

What do you think the best focus of this committee would be, given that the minister's advisory committee on wild salmon, with you as chair, studied this issue last year and that the Senate is now studying it? What gap or void would be most useful for us to look at so that we're not replicating studies?

Mr. Greg Roach: I think there's an opportunity to build on the work that was completed. We spent quite a bit of time networking with all stakeholders and partners—scientific partners and resource user partners—to put the information and the recommendations in there, so of course we would like to see those gain some traction. They could also be used in concert with the wild Atlantic salmon conservation policy, which is on the books and has never really been implemented, and it's up for renewal.

Between the recommendations and report we put forward and the wild Atlantic salmon policy that will be renewed, there's a lot of material to start acting on. We can study forever, or we can start actually taking some actions, particularly the ones that cost us very little. That's kind of what we're hoping for.

● (1640)

Mrs. Bernadette Jordan: Okay.

Mr. Roach, one of the main recommendations of the report from the minister's advisory committee was the creation of a wild salmon research and innovation fund. Could you give me more information on this and how it is different from the management program currently being administered by DFO?

Mr. Greg Roach: Basically, what we are recommending is dedicating additional funds for wild Atlantic salmon. The funds could be for a period of time. We didn't set an amount, but you know what can be available, I guess. Whatever is possible is what we would recommend

We avoided an amount, but it should be a substantial fund that would be available for people doing work on habitat improvement or scientific work, or perhaps for some other programs that would be helpful for both land-based survivorship and at-sea research, or even on-shore research.

One thing I should mention is that there are freshwater concerns, not just at-sea concerns, particularly with the acid rivers in Nova Scotia. That's a major problem for a number of rivers that at one time were extremely productive.

We didn't put a number forward, but that fund could be established and then used for the many partners who work on Atlantic salmon in collaboration with DFO. Perhaps some of the money could be used specifically by DFO and some by the partners. We suggested a scientific forum to ensure that there's collaboration on that work as well.

Mrs. Bernadette Jordan: Okay. Thank you.

To Dr. Hutchings, we heard on Monday from DFO and just now from Ms. Nodding that although everybody seems to think that seals play a role in the decline, there haven't been a lot of scientific studies done to determine whether or not that is actually the case.

I'm just wondering how long it would take to carry out a stomach content analysis on seals. It was one of the recommendations from the advisory committee. How long would that be?

Dr. Jeffrey A. Hutchings: I think there are two ways to respond.

In terms of doing a seal diet study, in principle it wouldn't take that long. In a couple of years you could have some information. The issue at hand, though, might be how many seal stomachs you would have to examine before you were able to meaningfully estimate the mortality that they're inflicting on salmon. If you picked the right seals, you might find that relatively few were consuming quite a lot, but you don't know that beforehand.

All that is to say that if seal predation were quite a substantive issue and they were eating lots of salmon smolts, then I think any typical diet study with seals, which would take a couple of years, might be able to detect that, but it might also be more important in some rivers than others. I would encourage the committee to think very carefully but strategically when making recommendations as to whether you're thinking about salmon throughout its entire range in Canada or whether it might make more sense to focus and prioritize on some key troubling rivers or areas.

Mrs. Bernadette Jordan: Thank you.

The Chair: Thank you, Ms. Jordan.

Mr. Strahl, you have five minutes, please.

Mr. Mark Strahl (Chilliwack—Hope, CPC): Thank you very much to all of the witnesses.

Mr. Taylor, you mentioned that Quebec had tried to make some changes to tags on the licences, but that legislative change is required from DFO to enable that to happen. Could you just elaborate on that so that perhaps we could make that recommendation?

Mr. Bill Taylor: Absolutely. It would be an important one.

DFO has the responsibility for regulating, for managing, Atlantic salmon in the four Atlantic provinces. Quebec has that responsibility for its rivers. Quebec is an excellent model for river management. A lot of local associations manage the recreational fishery and do a terrific job as far as wardens, habitat renewal, and so on are concerned.

When you buy a licence in Quebec, you get seven tags, so you can kill seven fish. On some rivers you can actually take seven large fish. The Quebec government did a consultation process last year almost simultaneously with the advisory committee and the work we were doing. There was strong support from anglers in Quebec to reduce the number of tags from seven to four, with only one large fish tag. The other three tags would be for use on grilse, or smaller salmon.

Unfortunately, that couldn't be implemented in 2016 because it requires a legislative change, which is a DFO responsibility. Hopefully it will be in place for 2017.

● (1645)

Mr. Mark Strahl: So DFO legislation prescribes that it must be seven?

Mr. Bill Taylor: No, no. In order for the Province of Quebec to change the number of tags it issues, that requires a legislative change, which is the responsibility of the DFO.

Mr. Mark Strahl: Okay.

Mr. Bill Taylor: That's in the works for 2017. The problem or disappointment is that it could have been implemented this year with the support of Quebec, but it will take two years to get done because of that legislative requirement.

Mr. Mark Strahl: Okay. Thank you.

Mr. Roach, I wanted to speak with you a bit about some of your recommendations that dealt with aboriginal food, social, and ceremonial fisheries. We heard previously from DFO officials that there had been some changes in harvest techniques by some aboriginal fishermen in some situations.

Can you speak a bit about those recommendations and the response you received from aboriginal fishermen when you were discussing this issue?

Mr. Greg Roach: During the meeting process, we had invited first nations and aboriginal groups to come and present, either directly in person or through written briefs sent to the committee. We had a very strong and very positive response in virtually all cases.

I think the committee observed that there's quite a variety among them, ranging from some really conservation-minded groups to ones that are a little more focused on the harvest of the salmon. To put it cautiously, in some cases the best practices weren't in place, while in other cases they were excellent.

We recognize the rights of the first nations groups for food, social, and ceremonial fishing, but we still felt we should put forward some ideas that DFO could put on the table for discussion points when food fishery plans were established.

One idea involves tending nets regularly. If nets are put out and not addressed every day, let's say, or every week, then the nets fill up and sink, and the salmon are lost. They're not captured and used as a food fishery, but they're still killed.

The positioning of the nets away from the river systems would more likely intercept migrating fish rather than local fish in the area. We spoke to that possibility.

There's also the idea of a takeout period. If there's a very strong run of fish going on or there are very large fish coming through, there would be a period when it would be critical to remove the nets so that the run could go through.

Another idea is using fish traps rather than fishnets. If there's an opportunity to successfully deploy live fish traps, then fish could be taken that would be of a size that would have a smaller impact on conservation. It would also avoid unnecessary mortality.

Those are some of the ideas.

Mr. Mark Strahl: Thank you.

The Chair: Thank you, Mr. Strahl.

You have five minutes, Mr. Morrissey.

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

First, as a member of the committee, I am going to declare I have no biases when it comes to the Atlantic salmon fishery, but I'm curious, and I'm curious for a number of reasons.

I've read a lot of the reports and studies that have been done on the issue. It's an issue that has been around for a little over 20 years, as we're here now in 2015. From the charts given to us by Fisheries and Oceans Canada, it appears the stocks literally dropped off the cliff around 1990 and have flatlined to this date. In listening to reasons that may account for this, the only consistency that I've heard is “could be”, “may be”, “unsure”, and “ don't know”. I find it amazing that after 20 years, with the expertise that exists, we cannot identify more than two issues that affected this dramatic decline.

I'm directing my observations to Dr. Hutchings and I would be curious to get a comment from Mr. Roach as well.

● (1650)

Dr. Jeffrey A. Hutchings: Thank you.

In terms of the factors responsible for the initial declines, I think it's fairly well established that habitat destruction and alteration were of key importance. It was the placing of dams, erosion, and land or river use issues.

Number two was over-exploitation, both in the freshwater and in the marine realm. Compounding that, in some areas, such as the Southern Uplands, we had issues associated with acidification. There were at least, depending on the region, two or three things that led to the decline.

Then once population has been reduced to a low level, the question then becomes, what affects recovery? One thing that has helped is a huge cutback on the commercial fishery for Atlantic salmon, beginning in 1984 in the Maritimes and in 1992 in Newfoundland. Also in 1992 was the cessation of the cod fishery. There was a lot of bycatch of salmon in that cod fishery, so if you look at Newfoundland, you actually see quite a positive response in survival of salmon and in returning salmon adults.

This is why I caution that we must place our arguments in the region we're discussing. In Newfoundland, for the most part, with the exception of the Conne River on the south coast of Newfoundland, there has been a fairly positive response to reductions in fishing pressure at sea in terms of salmon productivity.

In other areas, such the inner and outer Bay of Fundy and the Southern Uplands, we do have the issues of an increased proliferation of aquaculture sites. DFO, COSEWIC, and lots of scientific evidence point to issues associated with aquaculture operations, because salmon are at such low levels of abundance. In other words, I think it's a fact that they're at such low levels that they have become more vulnerable to threats that much larger populations in the past would not have been so vulnerable to.

In terms of the key issues, one reason I quite liked your question is that it reminds me that one of the reasons I identified this mathematical model idea is that what we'd ideally like to do from a science perspective is partition or break up the survival of salmon throughout their life cycle and determine where the bottlenecks and problems are.

We can identify fishing, seals, habitat alteration, dams, the Greenland fishery, striped bass, and a lot of different things, but what we need to do is have those management decisions guided by science in terms spending a lot of money and a lot of effort on something that maybe affects half a per cent of the survival rate of salmon. Wouldn't we rather focus on something that affects 10% of the survival rate of salmon?

That's why I would make the recommendation—it's one of the themes in the back of my mind—that science can help inform management and political decision-making by identifying where the bottlenecks are and what could potentially be done. In other words, if you took some mitigation measures in one particular realm, what's the best that could come out of that?

There have been about 22,000 or 23,000 papers published on Atlantic salmon.

Mr. Robert Morrissey: Twenty-three thousand?

Dr. Jeffrey A. Hutchings: Right. It's the third-largest number of scientific publications on any fish. The first is rainbow trout. The second is zebra fish. There's a lot we know. We know a lot more than what we don't know. I think we need to use a lot of the science information that we have at present to guide us, and I think we can use it to guide a mitigation strategy.

The Chair: Thank you, Mr. Morrissey.

Mr. Arnold, you have five minutes, please.

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

My first question will be for Mr. Roach.

We've heard that the value of Atlantic salmon to the Atlantic provinces and to Canada is approximately $150 million. Have there been any estimates of what a SARA listing might cost Canada or the Atlantic provinces? If a SARA listing did take place and we had to curtail other fisheries, other activities, with the restrictions that would be put in place by that, what might that cost us?

Mr. Greg Roach: To be perfectly frank, the committee did not do any investigations on that type of concept, so I don't have any information that I could put on the table based on the work that was done over the past year through the minister's advisory committee.

I think you're right that there would be other impacts. Now, what we did do—which isn't quite on a listing focus, but it's on another fishery focus—was put forward a number of recommendations to avoid both the intentional and unintentional capture of Atlantic salmon.

There will be a cost. The cost would be for personal-use fish that in come cases are legally allowed—this is non-first nations—in Canada, and others that are caught, or maybe poached, by other fisheries.

To your question, I do not have that information on what the costs would be to implement a listing in the areas where it's possible to list Atlantic salmon right now.

● (1655)

Mr. Mel Arnold: I have one thought on that, then: the cost comparison may be something worth looking at, the cost comparison of not doing anything or continuing on the path we are on and ending up with a listing versus trying to do something in the interim.

The next question I have is for Mr. Roach, but it's for Mr. Taylor as well.

As fishery and wildlife managers—not me—I see that we're very quick to manage the human impact, the human harvest, and so on, but very reluctant to manage the ecosystem as a whole. I'm talking in particular about predator management. As my colleague Mr. Sopuck mentioned, it's not just the striped bass but also the seals. What else is out there? Is there an appetite within the ministry and DFO to manage those predators as well? It seems like a relatively inexpensive path to see, as you mentioned, where the biggest bang for our buck is.

Mr. Greg Roach: I'll get started on that.

Again, I'll speak to the recommendations in the report. We were quite clear that we were recommending an increase in the harvest of striped bass, both the recreational harvest and the first nations harvest. We were recommending an increase in grey seal research and harvest. I know it's difficult in the larger scheme to try to predict what the impact of grey seals might be, or seals in general, but during the committee work we heard many testimonials over the course of our public hearings about seals that were congregating at the mouths of rivers, not just for smolts coming out but for the adults coming back in.

I know from personal observations at sea, during the days of the commercial salmon fishery, that if nets were not tended first thing in the morning, there would only be heads left in the nets, because the seals would fish the nets before the fishermen got to them. I personally believe there could be a very significant impact, particularly of grey seals but of other seals as well.

To try to get a handle on how much is difficult. A harvest of grey seals, perhaps, through first nations partnerships, and targeting areas that may be more prone to be impacting Atlantic salmon, was a recommendation that we clearly put forward in the report. We weren't avoiding that; we put it in there.

Mr. Mel Arnold: Mr. Taylor, is your group—

Mr. Bill Taylor: I would concur basically with what Greg Roach said.

Seals are likely a big problem for salmon in localized areas, as opposed to out in the gulf or the Labrador Sea. There are 10, 11, or 12 million seals out there now; there are only 500,000 or 600,000 Atlantic salmon left.

To Dr. Hutchings' point about a stomach analysis, seals might be a problem, but you'd have to harvest so many and do so many stomach analyses that you may never figure that out. There are lots of confirmed reports, particularly in river areas where adult salmon come in to certain areas that are choke points. Seals do take quite a toll, but it's a localized issue as opposed to a bigger, broader issue.

Mr. Mel Arnold: Thank you.

The Chair: Thank you, Mr. Arnold. We appreciate that.

For five minutes, we now go to Mr. Hardie.

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

My focus has been more on the west coast, because that is where I am from, but the stories are about the same. When we look at the issue with the Fraser River sockeye, the smolts run the gauntlet past aquaculture and out into the deep water, and then things happen in the ocean. There are definitely concerns about the number and quality of fish coming back. I guess some of the questions will be common to both coasts.

Notwithstanding the fact that Mr. Sopuck has blown his chances for a Christmas card from the striped bass, the data seem to suggest there are a lot more of them out there. There seem to be a lot more seals, and Ms. Nodding was commenting on other predatory species around her area.

Why is this so? If the salmon population is falling, you would think that at some point there is going to be a tipping point, and the predators themselves would start dying off. Is that not the case?

● (1700)

Dr. Jeffrey A. Hutchings: It all depends on how much effort it takes the predators to prey upon their favourite food items.

For many fish in the ocean, you are absolutely right. There will come a point when the search effort, the handling effort.... What's the point? For seals, there are salmon. Fine, it is a nice, fatty fish, but there are not that many salmon, compared to herring, mackerel, and many other species they can exploit.

The difference with Atlantic salmon and Pacific salmon is that at a very predictable time of year, you have a lot of bite-sized fish coming out of a source point. Marine mammals are not foolish, so it doesn't take that many marine mammals to have a demonstrable impact on the mortality rate, because they don't have to expend that much effort in order to obtain the food.

I would say that in general you are absolutely right, but salmon, with their migratory patterns, are perhaps a special case in this regard.

Mr. Ken Hardie: Thank you.

Mr. Roach, some of the testimony we heard the other day commented on the state of health of the smolts coming out and heading out to sea, and that perhaps through whatever was happening on the freshwater side of their cycle, they weren't as healthy and robust as they needed to be to survive out in the open water.

Do you have any comments on that?

Mr. Greg Roach: Yes, that was something that was raised, particularly in the meetings related to the Nova Scotia rivers. One of the big concerns was health, maybe even related to things like aluminum. Perhaps the acidic rivers are freeing up some heavy metals that would then be taken up by the smolts and would make the smolts not as capable of surviving when running the gauntlet of the predators on the way out and then surviving once they get there. That possibility was raised.

On that perspective, the striped bass populations have increased dramatically in the gulf and in the Maritimes regions. That is something that is different today. Also, some of the other fish in some of the rivers in the Gulf of St. Lawrence would go out in hundreds of thousands while the smolts were going out as well, so they would provide some cover, but those runs have changed. Now the smolts are kind of going out on their own, with a much increased population of striped bass.

When you put those two things together, it makes for a concern. The striped bass will go on to another species once they take advantage of the movement of smolts in the river. That is a concern.

Mr. Ken Hardie: Do I have time for another question?

To anybody, perhaps Ms. Nodding or Mr. Taylor, if you look at the landscape in the Maritimes, can you point to any best practices in aquaculture? It is not quite a smoking gun—maybe that is a little too dramatic, or maybe it isn't—but on both coasts they are certainly the focus of a lot of suspicion in terms of the health of the wild species. Are there best practices in your region that you can point to and say, “Look, if you are going to do aquaculture, do it like this”?

Mr. Bill Taylor: I will go first, if that's okay.

We have analyzed the regulations that are on the books. There is the Aquaculture Stewardship Council, which, like the Forest Stewardship Council or the Marine Stewardship Council, has a certification process that establishes best practices. Norway, by far and away, has the highest standards, and it still has problems with disease, sea lice, and escapes. More regionally for eastern Canada, Maine, by far and away, has the best practices.

Standardization of the regulations, as far as containment, disease treatment, pollution control, escapes, and all of that.... There are best practices, but even when you aspire to a Norwegian model, which is the gold standard, you are still going to have problems. That is why, as Mr. Donnelly mentioned, in the recent announcement the Norwegian government is recognizing the problems that open-net pen aquaculture has for wild salmon—the escapes, disease, and sea lice—and it is investing a huge amount of money into closed containment.

● (1705)

The Chair: Thank you very much, Mr. Hardie. We appreciate it.

We'll move to Mr. Donnelly to close things out.

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

Again, thank you to all our guests for providing this really important information.

Mr. Roach, in your opinion, why hasn't the department acted on the wild Atlantic salmon policy?

Mr. Greg Roach: I don't know if I could give a good answer to that. I suspect it wouldn't be unique for policy to be developed by any department in government and then for the realities of day-to-day management activities or priorities to take precedence over implementing that policy.

I don't think anyone deliberately said they're not going to do this. With all the battles that are fought within DFO and all the resource crunch pressures and increased activities that they're responsible for, I suspect it didn't hit a priority level. That's one of the reasons the need to renew and implement it was hammered by our report. It was due for renewal last year and it's something we flagged.

That's just a guess and that's my opinion. I don't think anyone deliberately said they don't like it. I think they were probably instrumental in helping construct it.

Mr. Fin Donnelly: Thank you.

I think you've answered this, Mr. Roach. Mr. Taylor, perhaps you could jump in or clarify, but have the 61 recommendations that the committee produced been costed? Did the committee cost them? We asked that question of the department, so they're certainly going to look into it.

Mr. Bill Taylor: No, our committee did not.

I'm sorry, Greg, I was waiting for you to jump in.

Mr. Greg Roach: We did make an effort to note that many of them are not money recommendations. We don't want it to be lost. We just don't have the resources. Something can be done now without additional resources.

Mr. Fin Donnelly: Yes, absolutely, and agreed.

Mr. Taylor, would you consider it appropriate and does the evidence suggest the government should designate areas in which aquaculture development should be prohibited—for example, where wild salmon populations are given COSEWIC endangered or threatened status?

Mr. Bill Taylor: I would agree with that statement.

I would add that we should be looking at areas like the Miramichi and areas in Newfoundland and Gaspé where there are very healthy or relatively healthy populations of wild Atlantic salmon where aquaculture does not exist in open-net pens now and make sure that it never goes there.

The inner Bay of Fundy, the outer Bay of Fundy, areas of Nova Scotia, and the south shore of Newfoundland are the areas where a lot of Atlantic salmon are in the most trouble. It's not that open-net pen aquaculture was the cause, but it is one more added threat. Wherever there is a proliferation of open-net pen operations, wild Atlantic salmon are in very serious trouble.

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

The Chair: Thank you to our guests.

That concludes today's hearing. On behalf of the whole committee I want to thank Mr. Roach, Ms. Nodding, Mr. Taylor, and of course Dr. Hutchings for their contributions today.

We have committee business to attend to for about five to 10 minutes. I'm going to quickly take a break, and Mr. Donnelly has a question.

Mr. Fin Donnelly: Before we go to a break, Mr. Chair, I submitted a motion. I was wondering if I could ask that the Standing Committee on Fisheries and Oceans hear from witnesses on the issue of adjacency and the policies regarding owner-operator fleet separation, specifically as it relates to the impact on the Canfisco plant closure in Prince Rupert.

I've given notice and I'm wondering if we could call the question just before we go to break and go in camera.

● (1710)

The Chair: We're going to call for it now.

Is there any input on this?

Seeing none, we're calling for a vote on Mr. Donnelly's motion.

Mr. Fin Donnelly: Mr. Chair, I ask for a recorded vote.

The Chair: You want a recorded vote. Okay.

Would you like the motion to be read again? I can do that if you want.

Submitted by Mr. Donnelly:

> That the Standing Committee on Fisheries and Oceans hear from witnesses on the issue of adjacency and the policies regarding owner operator and fleet separation specifically as it relates to the impact of the Canfisco plant closure in Prince Rupert.

Go ahead, Mr. Strahl.

Mr. Mark Strahl: Why aren't we discussing this in committee business?

The Chair: Because he just moved it.

Mr. Mark Strahl: Okay.

Well, I guess I will speak to it then.

The Chair: Okay.

Mr. Mark Strahl: In terms of the motion, I don't like a motion that singles out a specific company or a specific plant. It's clear this is about owner-operator fleet separation. We want to have a comprehensive study on how that should be done on both coasts. I understand the motivation here, but quite frankly, I think we have a work plan in place already that will take us to the end of this session and into the fall. I think the timing on this is poor, and we already have an agreed-upon work plan, so we won't be supporting this motion.

The Chair: Okay.

Mr. Morrissey.

Mr. Robert Morrissey: Mr. Chair, is there a specific time frame you're looking at? I take Mr. Strahl's point about our calendar. What time frame are you looking at?

The Chair: I'll let Mr. Donnelly respond to that, and then we'll go to Ms. Jordan.

Mr. Fin Donnelly: Thanks, Mr. Chair.

Just to clarify, the motion doesn't call for a study. It just calls to hear witnesses. I think one committee would be sufficient, and before the summer recess.

The Chair: Ms. Jordan.

Mrs. Bernadette Jordan: Mr. Donnelly is talking about one committee meeting. Do we have time in one committee? We haven't gotten to committee business yet and we still haven't figured out what our schedule is for the next six weeks.

I would have no problem with this if we have time to do it. My concern is that we vote on it and say yes, and then we don't have time to get to the other things that we want to address in this session.

Can you tell me if time would actually allow for this in this session?

The Chair: There are—I'm trying to do the math in my head—meetings for June, and there are still a few meetings in May. That's pretty much all I can tell you right now without conducting committee business. I don't want to do committee business on the spot here just myself.

Mrs. Bernadette Jordan: I know.

The Chair: Is there any more input?

Mr. Donnelly.

Mr. Fin Donnelly: I'll just add one other comment. This is an emergent issue, but if there isn't time to fit in one committee meeting by the end of June and it has to be pushed to September, I don't think that's an issue.

The Chair: Seeing no more input, I believe a recorded vote was asked for.

(Motion agreed to: yeas 6; nays 3 [See *Minutes of Proceedings*])

The Chair: I declare the motion adopted.

Thank you again to our guests.

We'll break for just a few minutes and we'll go straight into committee business.

[*Proceedings continue in camera*]