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Chair

Mr. Rodney Weston

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● (1535)

[*English*]

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

I'd like to thank our guests for joining us here this afternoon. We certainly look forward to hearing your comments, Mr. Lambe, and the opportunity for members to ask questions.

I'm sure the clerk has made you aware that we generally allow about 10 minutes for opening presentations, and then we have time constraints on our members for questions and answers. If I interrupt you, I apologize in advance. It's in the interest of fairness and in trying to make sure that everybody has the opportunity to ask all the questions they'd like to ask.

Whenever you're ready you can introduce yourself and your associates with you. The floor is yours.

Mr. Robert Lambe (Commissioner, Great Lakes Fishery Commission): Thank you.

To my right is Dr. Chris Goddard. He's the executive secretary at the Great Lakes Fishery Commission. To my left is Dr. Marc Gaden. Marc is the legislative affairs officer and communications officer for the commission. Both have considerable experience in those positions. They've been there for quite some time.

Chairman Weston, members of the committee, we want to start by thanking you very much for inviting us here today to discuss the threat of invasive species to the Great Lakes—a very critical topic. I commend the committee for holding these important hearings.

My name is Bob Lambe, and I'm currently the vice-chair of the Great Lakes Fishery Commission. I'm also the executive director of the Canada-Ontario Invasive Species Centre, located in Mr. Hayes' riding, in Sault Ste. Marie, Ontario.

I've already introduced Dr. Goddard and Dr. Gaden. Both have worked for a good number of decades, actually, in invasive species policy in the U.S. and have experience in Canada as well.

Last year marked the 90th anniversary of the arrival of sea lamprey in Lake Erie and the upper Great Lakes, but it's certainly not an anniversary that we celebrated. I speak to you specifically at the outset about sea lamprey because they're the most destructive and problematic invasive species to become established within the Great Lakes. They are native to the Atlantic Ocean, where they are in natural balance with their ecosystem. These eel-like fish became established throughout the Great Lakes through man-made shipping canals and have been an unmitigated disaster.

You've probably heard a bit about sea lamprey over the past few weeks. They attach themselves to fish with a suction-cup mouth, filled with sharp teeth and a rasping tongue. They're not pretty to look at and they're not pleasant to have. The tongue bores a hole through the fish's scales and skin, and the sea lamprey feed on the fish's blood and body fluids. They kill about 20 kilograms of fish during their lifetime. The fish that are attacked but not killed are left with gruesome, life-threatening wounds. I'm sure you've seen some pictures of those.

Sea lamprey caused an unprecedented ecological and economic harm to the Great Lakes. By the 1950s, they had virtually decimated the fishery. They attack and kill in large numbers a wide variety of species, including trout, salmon, walleye, whitefish, and even sturgeon.

It is not an exaggeration to say that sea lamprey changed the way of life for the Great Lakes region, decimating commercial, aboriginal, and recreational fisheries. Having no natural predators in the Great Lakes, a large supply of food, and more than ample spawning habitat, sea lamprey thrived in the system and are now a permanent part of the Great Lakes.

The border-blind sea lamprey problem promoted the governments of Canada and the United States to attack the issue together. In 1954, they formed the Great Lakes Fishery Commission and called upon it, among other things, to develop and carry out a sea lamprey control program. I'm privileged to serve as the vice-chair of this great binational body. In that capacity I work with my fellow Canadian commissioners and my American counterparts to formulate and ensure the delivery of a binational sea lamprey control effort to promote sound science and to take steps to protect and restore the fishery.

Although sea lamprey remain a blight on the fishery, control is possible, though the efforts are costly, labour intensive, and ongoing. If sea lamprey control is eased for even a short time, these opportunistic pests bounce back quickly and lethally, and we have a lot of data to demonstrate how that has happened over the years.

● (1540)

Control must occur. Without sea lamprey control, the Great Lakes would have no fishery to speak of. Sea lamprey control is delivered in several ways, including treatment of sea lamprey larvae in streams with specialized lampricide and with traps and barriers. Nearly written off 50 years ago, an extremely popular and vibrant recreational fishery now exists across the Great Lakes. Today, with ongoing sea lamprey control, that fishery is worth $7 billion to the people of Canada and the United States. That's $7 billion.

Disappointingly, even after all that we know about invasive species, even after more than 75 years of battling sea lamprey, even after suffering billions of dollars of irreversible loss and permanent ecological harm, we have not really learned the lessons that we should have learned from sea lamprey. Today the Great Lakes harbour more than 185 non-native species, and I'm sure you've heard that number several times over the past few weeks. Several of those species entered the lakes accidentally, and most entered the system long after sea lamprey was recognized as a major ecological and economic problem.

Also disappointing is that although we can control sea lamprey, and thus improve the Great Lakes fishery, Canada lags behind in its share of the binational obligations at a time when we really do need more control. While sea lamprey control has been reduced by 90%, in some areas of the Great Lakes we are above target. We have established targets for each lake, but we are above targets in many other areas, including Lake Superior, Lake Huron, and Lake Erie. This means that fishery losses are still occurring. Lake Erie, as you probably know, is the most productive freshwater fishery in the world, after Lake Victoria, and it's experiencing sea lamprey abundance that are the highest on record. Right now, we're experiencing the highest sea lamprey wounding rates that we've ever seen. We think those sea lampreys are actually coming from the Lake Huron and Lake Erie corridor—in other words, the St. Clair River, Lake St. Clair, and the Detroit River. We're doing further investigations to try to confirm that.

Canadian funds are desperately needed to bring Lake Erie and other sea lamprey hot zones to target levels. Until we do, fish reproduction and fish abundances will be stymied. Canada currently contributes $8.1 million annually through Fisheries and Oceans Canada to the binational treaty, as coordinated by the Great Lakes Fishery Commission. In comparison, the United States contributes more than $20 million annually. The two nations agree to share research and administration equally, and agree that 69% of sea lamprey control costs are to be paid by the United States and 31% by Canada. That formula was derived with the recognition that all of Lake Michigan lies within the United States. Even with that equitable arrangement, Canada still lags behind in its commitment, as I mentioned.

In fiscal year 2013, Canada, according to this formula, should be providing approximately $15.9 million to the control effort, an amount that pays the nation back many times over in the fishery value and in the tax revenues from those fisheries. Moreover, because Canada is behind in its commitment to this successful program, in 2012 the U.S., because it does not want to see sea lamprey control slashed, actually subsidized it directly to the tune of around $360,000 for the operation of the Sea Lamprey Control Centre, which is also located in Sault Ste. Marie, Ontario.

That's a lot of information about sea lamprey, some of which you've probably heard before. I just want to talk a little bit about Asian carp, which I'm sure you're also familiar with.

Asian carp is the invasive species that has garnered quite a bit of attention, and which certainly threatens to enter the Great Lakes. First, I want to congratulate the Harper government for its recent announcement of $17.5 million over five years to help prevent the introduction of Asian carp. The key word here is “prevent”, as methods to control Asian carp do not exist currently. Once they are in the Great Lakes, Canadian and American scientists say that the likelihood of spread throughout the system is very high.

● (1545)

You're certainly aware of the Chicago Area Waterway System, or CAWS as it has become known. It represents the most likely pathway for Asian carp to enter the Great Lakes. CAWS is a series of canals and rivers in and near Chicago. It's a man-made connection between the Great Lakes and the Mississippi River basins. The waterway is a vibrant transportation corridor, a route for pleasure boaters, and a waterway management system. So it provides a lot of good in addition to the concern that we have of it being a pathway, which makes the problem that much more complicated to resolve.

We know of an electrical barrier that was constructed and operated by the U.S. Army Corps of Engineers, in close cooperation with the federal agencies and states, and that's the main line of defence against Asian carp at the moment. The barrier cost tens of millions of dollars to construct, and without it, the carp would have had an unimpeded pathway into Lake Michigan.

But the barrier is not foolproof, despite its effectiveness to date. To that end, the Great Lakes Fishery Commission, the Great Lakes and St. Lawrence Cities Initiative, the Great Lakes Commission, elected officials from all parties, and non-government organizations throughout the basin have repeatedly identified the re-establishment of the natural barrier between the Great Lakes and Mississippi basins as paramount.

In January of 2012, for instance, the cities initiative and the Great Lakes Commission released a joint report describing how, precisely, that separation could occur. The Army Corps of Engineers is in the throws of a major study now, looking at the same question. In 2010, citizen advisers to the commission from both Canada and the U.S. passed a joint resolution making the same recommendation—to have this natural barrier re-established.

Also, to better understand Asian carp, the Great Lakes Fishery Commission, during the previous 18 months, has been facilitating the development of a comprehensive assessment of the threat that the Asian carp pose to the Great Lakes. Fisheries and Oceans Canada conducted this assessment using the highest standards of science—it's incredible science that went into this study—and took substantial steps to have the assessment peer reviewed by experts in the field.

Moreover, by involving both Canadian and American scientists in this assessment, the report drew upon the wealth of expertise in both countries to help us best understand the Asian carp risk. The commission expects that the assessment will inform decisions around management and prevention of Asian carp. The assessment was completed and peer reviewed in January.

Given the urgent need for this information, we're anxiously awaiting the release of the assessment. The assessment has not been released yet, but the commission was a partner in this project and I can tell you that the assessment is quite sobering. It provides ample justification, not only for the government's significant pledge of resources to combat Asian carp but also the considerable resources that will be needed to achieve separation in the Great Lakes and the Mississippi basins.

What can be done if carp enter the Great Lakes? Not much. At least not much at the moment. Apparently, control mechanisms do not exist for controlling Asian carp. That said, the effort to find solutions is improving with investments in the United States, and we hope that some of that money that Canada is committing can be directed towards the important research required to further this effect.

So carp have not yet been established in the Great Lakes, which means that we still have some time to avoid the severe consequences presented in the risk assessment. Canada's commitment to the carp issue is warranted and extremely welcome.

● (1550)

Let me conclude by noting that the history of aquatic invasive species has shown that people are left with few options to control a species once that species has been introduced into the ecosystem. Sea lamprey has taught us tough lessons, lessons that would serve us well and that we should heed as we consider the future of invasive species policy in Canada. A single invasive species can cause significant permanent damage to the economic and ecological health of the region. Cumulatively the more than 185 non-native species have cost the region billions of dollars and have altered the ecosystem permanently.

Control of invasive species, if even possible, is expensive and ongoing. The commission has spent more than $300 million since 1956 controlling sea lamprey. This amount, while large, does not account for the billions of dollars of revenue lost to commercial, tribal, and recreational fisheries in the Great Lakes basin, nor does it account for the billions of dollars spent by state and federal governments over the decades to rehabilitate and propagate the fishery after the sea lamprey invasion. Moreover, this figure does not include the immeasurable damage to the ecology of the Great Lakes basin. It's easier to measure the economic consequences; the ecological consequences are more difficult to quantify.

This is one of the sad parts about this. Citizens often shoulder the costs of an invasive species, not the sectors that are responsible for their introduction. Programs to manage invasive species are expensive and are borne by the taxpayers. So the key message is that prevention is key, because eradication is usually not possible. Prevention is so important.

On that note, Mr. Chairman and members of the committee, I thank you very much for inviting me and my colleagues here today to talk to you about this critical issue of invasive species. We call upon the committee and the government to heighten its commitment to sea lamprey, and strongly support Canada's new commitment to Asian carp prevention. Thank you very much.

The Chair: Thank you, Mr. Lambe.

We'll move right into questions at this time.

Mr. Hayes.

Mr. Bryan Hayes (Sault Ste. Marie, CPC): Thank you, Mr. Chair. Thank you to our guests—well, my guest from Sault Ste. Marie.

I have to admit, I'm really struggling with some of your comments on sea lamprey and some of the comments we've heard. You mentioned that the highest sea lamprey wounding rates we have ever seen are happening right now. We've heard, too, that there's a group, the Upper Midwest Environmental Sciences Center, that has stated that the adult sea lamprey in the St. Mary's River is still at the same levels that it was 40 years ago. All of this leads me to believe that whatever we're doing is not effective. I'm struggling with that.

Is it a fair statement to say what we're doing isn't effective? The second part of that question is: what else should we be doing to become more effective, if in fact we currently aren't?

Mr. Robert Lambe: I'll provide you with a high-level answer, and then I'll defer to my colleagues, who know the program much better.

The first statistic I think we need to think about is the 90% statistic. The populations are generally controlled to within 90% of what they were at their peak, and so the effectiveness of the program is not really a question.

In certain areas there have been outbreaks over the years, for various reasons. Right now the big problem we're having is Lake Erie. We're having to do further investigation to find out what the sources of those new lamprey populations are. There are obviously streams that are producing sea lamprey that weren't before. We're working feverishly to try to determine where they are. I think we are making some progress there.

Right now, as we said in the statement, the major areas or the major mechanisms by which we're trying to control the population are with lampricide, which is a product that's sensitive only to sea lamprey, and through barriers and trapping. A big part of our program is research as well, and we're always seeking new ways to try to control these animals. We're making great advancements in the area of pheromones as an alternative mechanism by which we can control these animals. The effort that has been put into research in the last number of years is starting to turn up some good alternatives as well.

I'll turn to Dr. Goddard to add to that.

● (1555)

Dr. Chris Goddard (Executive Secretary, Great Lakes Fishery Commission): Thank you.

Speaking specifically to your question, we have a target of about 4,000 lampreys in Lake Erie, a relatively smaller system than those of the other Great Lakes. We were within that target for a large number of years. Then lamprey populations started to increase within Lake Erie.

It was really kind of tragic, because, as you know, the Great Lakes states and the Province of Ontario had spent decades trying to re-establish lake trout into those systems. We got to the point where we had the mean age of females up at around seven. The female lake trout were just at the point where they were going to start to naturally reproduce when the lamprey populations increased and knocked the mean age of the females down to about five, to a point where we weren't having much natural reproduction.

The commission decided that, as there were only 10 tributaries in Lake Erie that we knew had spawning populations of sea lamprey in them, we would go in and we would treat every stream in Lake Erie in two consecutive years. We treated in the spring one year, and then in the next year we treated in the fall.

Our expectation at that time was that we would knock the stuffing out of the sea lamprey populations in Lake Erie. We thought that spawner abundance would be very low and there'd be very little recruitment. We actually believed that we would drive sea lamprey populations down to a level where they didn't colonize some of the other streams.

Well, what happened was that the lamprey populations were increasing, and we went in and we treated it two years in a row. The population—the target is 4,000—went to 40,000 sea lampreys in Lake Erie. So we'd put forward our maximum level of control effort and had the highest populations we'd ever seen in Lake Erie.

We went back to the streams that we treated and we were correct: there were virtually no spawning lampreys in the system. We had effectively controlled them in the tributaries to Lake Erie.

As Commissioner Lambe pointed out, we went to the Huron-Erie corridor to see what was happening. We've been doing a lot of work —last year, and ongoing this spring—looking for populations of larval lamprey. We have found lamprey. By doing extensive trawling last fall, we were able to find lamprey transformers migrating down the Detroit River into Lake Erie.

What we think has happened is that through water quality improvements in that system, that area has now become a successful reproductive area for spawning sea lampreys. So we are going out trying to find exactly where they're spawning in the Huron-Erie corridor this spring.

This is not new. We had exactly the same thing happen.... We had Lake Huron under relatively good control, and suddenly it went absolutely crazy. That was because of tremendous water quality improvements and the construction of some wonderful habitat in the riffles in the St. Mary's River. What we produced was the finest sea lamprey spawning area in the Great Lakes. The St. Mary's River suddenly was producing more lampreys than all the rest of the Great Lakes combined.

What ended up happening was that through research we found an effective way to, (a), find them, and then, (b), when we developed a new lampricide, granular Bayluscide, we were able to use that to control them. We've been able to knock the abundance of lampreys in the St. Mary's River from 5.8 million down to about 0.6 million.

● (1600)

Mr. Bryan Hayes: In your strategic plan, I'm looking at "Pillar three: Strategic Alliances and Partnerships". One of the goals is to strengthen interjurisdictional fisheries management. That would indicate to me that it's not strong enough as it stands, and therefore improvements are necessary.

Can you speak a little bit to what is being done to strengthen interjurisdictional fisheries management?

Dr. Marc Gaden (Communications Director and Legislative Liaison, Great Lakes Fishery Commission): Yes, Mr. Hayes, I will speak to that.

One of the interesting things about Great Lakes fishery management—for the MPs who represent coastal ridings on the east or west coast, this might be a little different—is that in the Great Lakes region the state and provincial boundaries go right to the middle of the lake. They go right to the centre, and fishery management is the responsibility of the individual state jurisdictions. On the U.S. side the tribes have management responsibilities. It's different in Canada. The Province of Ontario has the primary management responsibility.

What our treaty did was it very much called for the fishery commission to make sure that all of the jurisdictions are talking to each other, because up until the 1950s, each jurisdiction managed in their own little piece of the lake, which doesn't make a lot of sense, especially when Canadian and American jurisdictions sometimes had wildly different opinions about how management should occur. Some wanted to regulate and some didn't. So our treaty said the fishery commission needs to establish these working arrangements, and we've been doing that since 1964. But it always needs to be better because each jurisdiction has its own suite of political considerations, has its own laws, has its own constituencies, and very often, has its own policies, procedures, and objectives that they want to do. It's always a challenge to keep those partnerships strong and those jurisdictions on the same page.

That's just fishery folks talking to fishery folks. The other partnership work we need to do—in this era of having to do more with less and also having to make sure that we establish connections with ecosystems—is to make sure that the people who are involved in fishery management are also talking to the people who are involved, say, in water quality management or water quality improvements or the rehabilitation of areas of concern in the Great Lakes. What that means is that we can manage our fisheries, but it's vitally important that the people who are managing fisheries also understand why it's important to improve water quality, improve habitat, and so on.

Those are the partnerships that we are trying very hard to strengthen. It's to maintain those relationships, but we can always do more to strengthen them. There's not enough talking we can do to make sure that our policies are all on the same page.

Mr. Bryan Hayes: Thank you, Mr. Chair.

The Chair: Thank you very much.

Mr. Chisholm.

Mr. Robert Chisholm (Dartmouth—Cole Harbour, NDP): Thank you very much, Mr. Chairman.

Thank you very much to our guests.

As I listen, hearing after hearing, to representations on the invasive species problem, I'm amazed. I'm from the east coast, from Nova Scotia, and so this is all relatively new to me.

Boy, do you ever have a challenge. The sea lamprey issue is enormous.

The indication, of course, is how much of your budget is taken up by it. The fact that you have two nations, four states, numerous first nations communities, and two provinces means it's big.

The research is so important because of the impact it has on the commercial fishery and the fishery in general, fish habitat, and so on.

I want to pick up on the fact that a release came out from the committee of advisers to the commission last week, June 7. The committee of advisers is made up of both Canadian and U.S. appointees and members of various first nations groups. If I may, Mr. Chairman, I just want to quickly read the resolution that was passed,

> *Therefore be it resolved* that the Committee of Advisors to the Great Lakes Fishery Commission calls on the Minister of Fisheries and Oceans and the Government of Canada to consult broadly with aboriginal peoples, stakeholders, and fisheries and aquatic science experts possessing insight into the full range of ecosystem functions necessary for the health of Great Lakes and their commercial, recreational and aboriginal fisheries, before making changes to the Act....

I'm sorry, I should have said that it is specifically in regard to Bill C-38 and the changes that are proposed to the Fisheries Act.

Finally,

> *Be it further resolved* that Advisors call on the Minister of Fisheries and Oceans and the Government of Canada to ensure that for the purposes of the Act, fisheries habitat is defined to include the full range of habitats important to the maintenance of fish stocks, including those created by human activity, such as drainage and degradation of wetlands, impoundment or channelization of rivers and streams or shoreline and bed alterations of water bodies, or otherwise the product of the reconfiguration or alteration of aquatic habitats.

Mr. Chairman, I'd be happy, if you'd like, to make that release available if you don't have it.

Clearly the committee of advisers has some serious concerns about Bill C-38 and what it's proposing to do. One concern is that they feel more consultation is required. Second, they feel that the definition in the act of fisheries habitat is not sufficiently broad to consider.

Initially I have two questions. One is—and you explained this to us a little bit—that we see on your organization chart that on either side of the commission are the advisers as appointed by Canada and the U.S., but then where is this committee of advisers relative to the commission?

Second, do you support, as does the commission, the resolution as provided by the committee of advisers?

● (1605)

Mr. Robert Lambe: It's always good to talk to a fellow easterner. If you haven't determined it already, I'm from Newfoundland. That's the accent you're trying to figure out.

Mr. Robert Chisholm: I wasn't trying to figure it out.

Mr. Robert Lambe: It has been purged by years of living in Ontario.

Voices: Oh, oh!

Mr. Robert Lambe: I'll let Dr. Goddard or Dr. Gaden speak to the relationship between the advisers and the commission. They have much more experience with it than I do.

In terms of the resolution, we support the resolution, but the key part of the resolution that you read was the request for consultation, and I think that's what they're really responding to. There isn't the clarity that a lot of people in the community would like to have with the proposed changes that are coming forward. There are things in there that I think people are excited to see and there are things that are causing concern. I think the areas that are causing concern are more to do with a lack of understanding as to the specifics of what those changes would be, so I think that's the key thing that we focus in on there—the requirement for further consultation.

Habitat is really critical. The healthier the habitat is, the healthier the fisheries are. That's one of the things you'll hear across the board on invasive species. The more vulnerable your ecosystem is, the more vulnerable it is to attack from invasive species. It doesn't matter if you're talking about terrestrial or aquatic invasive species.

Habitat is extremely critical, so any time that we talk about legislative changes to habitat, it raises awareness. I think that's what people are looking for—that level of clarity about the specifics about what would be in the act.

Dr. Marc Gaden: I have a little background about the committee of advisers, too, and this goes back, actually, to a few of the points Mr. Hayes brought up about partnerships. Back in the days of the formation of the fishery commission, it was very much envisioned that this commission would be a focal point for discussion, not just among the states and the province but also among the stakeholders of the region, because we don't have an illustrious history, up until the 1950s, of actually working together, not just across political jurisdictions but with the various interests in the basin.

On the U.S. side, it's right in the law. In the fisheries act of 1956, which created the fishery commission, it is said that we shall support a U.S. committee of advisers that has to be heard on issues of importance, and they represent the sport fishery, the commercial fishery, the state agencies, and the public at large.

On the Canadian side, it's not written into law, but the fishery commission formed—informally—a committee of advisers in the 1980s. It was a committee of two: sport fishing and recreational fishing. In the late 1990s, it formalized the committee and expanded it to include, not just sport and recreational fishing but academia, the environment, the public at large, and aboriginal communities.

So we have formal mechanisms now to get that input, and it's important to us because it's not just a way for the fishery commission to receive the input from the advisers, but it also sometimes gives us sober second thought on issues of importance. We have a sounding board, and we get an understanding of where they're coming from.

In this particular case with the resolution, we actually would not have had a good idea of the level of consultation that was occurring on this had the advisers not come to us and said, “You know what? This Fisheries Act is pretty important. We would like to have some time to study it, but also some input into what exactly is being proposed”. That's what they were communicating to us.

● (1610)

Mr. Robert Chisholm: Mr. Goddard.

Dr. Chris Goddard: I have nothing further to add to that.

Mr. Robert Chisholm: This resolution went to the Prime Minister and the Minister of Fisheries, I believe. Is that true?

Mr. Robert Lambe: Yes, sir.

Mr. Robert Chisholm: Have you had any response from the resolution?

Dr. Marc Gaden: I believe it was sent last Thursday or Friday, so I haven't seen a response yet.

Mr. Robert Chisholm: Okay. This is from the committee of advisers. Has your commission likewise communicated?

You said that the value of the committee of advisers was that it brought to your attention that this was going on and needed further investigation. So the question would be, has the commission itself communicated, or is the commission itself intending to communicate with the Government of Canada?

Dr. Marc Gaden: Our staff at the fishery commission actually did the faxing of the resolution to the Prime Minister's Office. We facilitated that communication. We have not had a chance, given that we drove back from the meeting last Friday, to follow up on that.

But it did come from our committee of advisers. We have an obligation to make sure that the recipient of that is aware of how that committee works and of the interests of this fishery commission in that. It goes without saying, at least from our end, that if the advisers who are advising on these issues feel they haven't been heard, it's something we take seriously.

Mr. Robert Lambe: It's an evolving issue and it's fairly current, so we haven't had a formal approach or strategy for dealing with the changes thus far. As Dr. Gaden said, we're learning more from what the advisers are bringing to us than from any other source.

So certainly at this point we're waiting to see what the response is to the resolution that the advisers brought forward. They've raised some interesting questions, not in the resolution but in the discussions with us, about the degree to which wetlands would be protected going forward. Wetlands provide critical habitat, not only in terms of the wetlands themselves but in terms of the headwaters that they provide for fish habitat downstream. The specialists on that advisory body, in particular, are concerned that wetlands might not be as protected with the changes. Again, it may be premature to jump to that conclusion. We just need to know more about what the legislation is about.

So we do support the resolution and we're anxiously awaiting what the response will be, because we all need to know more about what the spirit and the content of the legislative changes are.

The Chair: Thank you very much.

Ms. Davidson.

Mrs. Patricia Davidson (Sarnia—Lambton, CPC): Thank you very much, Mr. Chair, and thanks to our presenters here this afternoon. Certainly, it's a pleasure to have you here, and thank you very much for coming.

We've been hearing from a lot of different people, people who have been intimately involved with the aquatic invasive species and the issues that they present for both sport and recreational fishing, as well as total economic impacts that they may be having in many ways. It certainly spreads out across the communities that would be involved.

I know that your fishery commission is involved and works with many other groups, and you've talked a bit about it and you've talked a bit about your advisers, but what groups in fact do you work with?

Do you work with the IJC? Do you have any formal relationship, other than the advisers, with the sport fishing and recreational fishing groups? What is your direct role with the Canadian government?

● (1615)

Mr. Robert Lambe: I'll let my governance expert speak to that in more detail, but there is a formal network and an informal network. I think one of the things that we can say about the commission—it being slightly older than I am—is that it has forged incredible relationships over the years. People don't think anything of picking up the phone and phoning the commission or the commissioners or the advisers about issues. We hear it from people who are happy and unhappy, whether they're part of that network or not.

Before I turn it over to my colleagues, I would say that, to my knowledge—and they can correct me if I'm wrong—despite the fact that we actually have eight U.S. states that have a stake in the business of the commission and have to decide amongst themselves how to allocate the fishery resource, and we have one or two provinces, depending on the issue, and tribal fisheries and aboriginal fisheries, there has been only one incident that I'm aware of in the 50-odd years where they weren't able to reach agreement on how to allocate that very valuable resource and that was resolved within the commission. When you consider that they bring pretty sound science to the table to base their arguments on, I guess that's part of the reason why there have been few conflicts. But that particular one was resolved on the basis of science as well.

So there's a formal and an informal network, but I'll defer to Dr. Gaden.

Dr. Marc Gaden: Maybe I'm the governance expert.

We have, let me say, a mature assortment of institutions in the Great Lakes basin to deal with governance, and you're looking at one of them, the Great Lakes Fishery Commission, which operates under a treaty. We have the International Joint Commission, which operates under a treaty. We have other institutions that operate under various types of agreements, like the Great Lakes Commission, which is an interstate compact. Part of the U.S. Constitution allows for the formation of state alliances in a formal way. There is a compact, for example, that governs the allocation of water and diversion of water in the Great Lakes basin, which the provinces have also agreed to.

We do have an assortment of institutions to deal with the varying problems in the basin. It's a double-edged sword. On the one hand, we have a wealth of expertise to deal with the issues that exist out there. On the other hand—and let's use invasive species as an example, because this is the subject of the hearing today—if there is nobody specifically in charge of something, or if everybody is in charge of something and interested in it, you're in the same place: nobody is really accountable for it.

That's why these cross-linkages need to occur in the Great Lakes basin. We're in charge of lamprey. It's right in the treaty. The buck stops with us. We're accountable for it, and the control program works. You can come and ask us questions on how we're doing. You can't ask the same question for any of the other invasive species in the Great Lakes basin, even though there is a wealth of institutional arrangements that exist.

Speaking specifically about the Great Lakes Fishery Commission and our relationship with other institutions, we do not have a formal relationship with the International Joint Commission, our sister treaty organization, but we do have a longstanding informal relationship with that commission, because it's absolutely essential that our two commissions work together. We have differing missions, but we have the same vision for the Great Lakes. Our commissioners meet with the International Joint Commission commissioners from time to time. The staff interact on a regular basis, and we try to work together to articulate what our shared goals are.

With the fishery institutions of the Great Lakes basin, the Great Lakes Fishery Commission does not have direct management authority or even the ability to compel any jurisdiction, whether it's Ontario or any of the eight Great Lakes states or the U.S. tribes, to do anything with respect to their fisheries. Because of the fact that the political authority is diffuse in the Great Lakes basin, that means that the institutional partnership part of our vision is vital. If we want something to happen with fisheries, it has to be done on a consensus basis under a non-binding agreement. And as Mr. Lambe said, the instances when the states and the province have not been able to reach agreement—in this case he was referring to the allocation of walleye and yellow perch in Lake Erie—are extremely rare. We try to maintain a process whereby these decisions can be made, while at the same time respecting the sovereignty of the provinces and the states and the tribes to manage their fisheries.

● (1620)

Mrs. Patricia Davidson: Your group is specifically in charge of sea lamprey. Is anybody specifically in charge of other invasive species, such as Asian carp, or is that something that needs to be done?

Mr. Robert Lambe: It's an interesting question. That's a real challenge to answer in two minutes, but I was actually remiss in not explaining that a bit better. There is a shared jurisdiction between the province and the federal government in the Great Lakes inland fisheries management, and it's complicated, to say the least.

The primary federal department is Fisheries and Oceans, and within Ontario it's the Ministry of Natural Resources. There is some formality within the commission to recognize that. There's always one, and typically two commissioners, of the four Canadian commissioners who are Fisheries and Oceans people—usually senior people—and one of the other commissioners is an Ontario representative, usually the deputy minister of Natural Resources. Underneath the commission there are a number of committees that work day to day on the issues and so on, and they feed up to the commission. Those committees are populated by people from both agencies as well. The commission really does have good representation from the agencies that have a mandate within the Great Lakes.

As far as the responsibilities are concerned, it can be confusing. The federal government is responsible for policies and programs and standards under which fisheries are managed. The provincial government and inland Canada is responsible for the management of those fisheries, so they often do much of the science. They do the administrative part of fisheries management, such as licensing and so on and so forth.

Within the grand scheme of things, compared to traditional fisheries management, invasive species is kind of the new kid on the block, if you like. I think in North America in general, we haven't responded to that yet.

Mrs. Patricia Davidson: So if prevention is critical, then it's—

The Chair: I think you're done.

Mrs. Patricia Davidson: Can I ask this last question?

The Chair: If you're quick, very quick.

Mrs. Patricia Davidson: Okay, I'll make it quick.

Are DFO and MNR, then, the main ones responsible for prevention and preventative strategies on the Canadian side?

Mr. Robert Lambe: Yes.

Dr. Chris Goddard: To follow up specifically to your question, there are two coordinating bodies that exist on the Great Lakes right now. One is a U.S. panel, which is orchestrated through the Great Lakes Commission, called the Great Lakes panel on aquatic invasive species. It serves to bring people together to exchange information.

With respect to Asian carp, there is a committee called the ACRCC, the Asian Carp Regional Coordinating Committee. That is a committee that is headed by the Army Corps of Engineers, EPA, and the Council on Environmental Quality.

In fact, the administration has appointed a person we refer to as the “Asian carp czar” to oversee it. It brings together all of the states and the federal government agencies involved and tries to coordinate it. The Great Lakes Fishery Commission is the only non-government agency that sits on that ACR Coordinating Committee. I'm the only Canadian who sits on that committee, but I do not speak for Canada, unless the night before a meeting the Leafs beat the Blackhawks or something like that.

Voices: Oh, oh!

● (1625)

The Chair: Thank you very much.

Mr. Robert Lambe: Could I add one quick point to that?

The Chair: We're pushing it here. Sorry, Mr. Lambe, I have to move on.

Mr. MacAulay.

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

I can understand the commission of advisers with the resolution, because I've been around here for a few years and the Fisheries Act has been discussed with my own party and other parties, and generally there was never enough discussion. We have great difficulty when there's no discussion, but that seems to be about where we are right now, dare I say.

Dr. Goddard, with regard to the St. Mary's River, if I understand correctly, you didn't completely clean it up, but you took about 90% of the sea lamprey out of there. Is that correct?

Dr. Chris Goddard: Yes, sir.

Hon. Lawrence MacAulay: Do I understand correctly that the conditions became a lot better for the sea lamprey to expand and that's really what caused the problem? I'd like you to elaborate a bit more on that.

Dr. Chris Goddard: Sure. There were two things that happened. One was the creation of a bunch of spawning habitats, primarily for steelhead in the area, which turned out to be wonderful sea lamprey spawning habitat. The second thing was an overall improvement in the water quality that occurred in the St. Mary's River. The water quality prior to the late eighties had been a real impediment to sea lamprey effectively spawning in that area.

What the commission was able to do was to develop a deep water electrofisher. We could drop this thing down into the water column, shoot electrical current into the sediment, the larval lampreys would then swim up, and like a huge vacuum we would suck them up into vessels on the surface.

Hon. Lawrence MacAulay: Can I ask, does that affect other species when you do this?

Dr. Chris Goddard: No, sir, that does not.

Hon. Lawrence MacAulay: Okay.

Dr. Chris Goddard: They go up and then they're counted. That way, we were able to accurately map the densities of larval sea lamprey within the St. Mary's River.

Then we developed a new type of lampricide that we call granular Bayluscide. If you think of a cold capsule, those Contac Cs, we put the lampricide on the grain of sand and then we coated it with a time capsule. We would spread this granular Bayluscide over the water, it would sink to the bottom, and it would slowly dissolve right at that sediment water interface. So the lamprey, just sticking their heads up through the sediment, would take in the granular Bayluscide and would die. That was the treatment we used on the St. Mary's River, combined with a trapping initiative to eliminate as many spawning sea lamprey as we could.

What is particularly important is that not only were we able to reduce the number of lamprey in the St. Mary's River, but we were then able to significantly reduce the population of adult parasitic lamprey in the north channel of Lake Huron and Georgian Bay and in northern Lake Michigan.

We've seen a huge reduction in wounding rates in lake trout. It's critically important because I'm sure you all know the lake trout populations are starting to rebound, particularly in Georgian Bay and Lake Huron, and we're seeing a fair amount of natural reproduction in those lake trout populations.

Hon. Lawrence MacAulay: Thank you very much.

Would you consider that to be the best control method you have?

Dr. Chris Goddard: No, sir. I think the effectiveness of the granular Bayluscide is about 75%. When we use our lampricide, our TFM, and we apply that in streams, we are usually somewhere between 95% and 99% effective in terms of reducing larval lamprey.

Dr. Marc Gaden: It's important to note that's the most effective control technique we have for that river. We don't have an alternative for the St. Mary's River. It's too big to treat with the regular lampricide.

Hon. Lawrence MacAulay: How do you see the Asian carp? Is that waiting to happen? What's your opinion? Is it inevitable, or not?

Mr. Robert Lambe: It will happen if we aren't aggressive.

Hon. Lawrence MacAulay: So the government has to provide you with more funds.

Mr. Robert Lambe: Funds are an important part of it.

We talked about the canal and getting separation there. That's really important. It's not the only vector though.

Hon. Lawrence MacAulay: No, it has to be used correctly.

Mr. Robert Lambe: Yes, we've had four seizures of live Asian carp coming across the border in the last eight months or so from organizations that are farming these in the U.S. and bringing them into Canada. If they get released live into Canadian waters, that's another vector that's of great concern to us.

So the regulations are really important, and enforcement of those regulations is really important.

● (1630)

Hon. Lawrence MacAulay: Do you believe that most people who would bring in these species would not understand the harm they're causing. I'd like you to elaborate on your view on education and dollars spent on education.

Mr. Robert Lambe: You're absolutely right. That's why we're pleased to see that, in the announcement of the $17.5 million, there is a specific line for education and outreach.

We have experience getting to the population, the target audience in other areas, be it recreational boaters or...we have similar issues with the movement of pests in firewood, for example. Being able to get to campers and not moving pests through firewood movement has incredibly positive results. So it is really prudent to invest a significant portion of any moneys that are available in education and outreach and in finding the target audience so it has maximum benefit.

Hon. Lawrence MacAulay: Thank you very much. Well said.

The odd time the government can do something right.

Most of the funding you receive seems to go to sea lamprey. What other funding do you have, or do you use any funding other than what's spent on sea lamprey?

Dr. Marc Gaden: Under the Convention on Great Lakes Fisheries of 1954, we have a direct responsibility to control sea lamprey. It's a boots-on-the-ground program, so that should naturally take up about 90% of our budget.

But out of the five duties the fishery commission has in the treaty, specifically, four of those deal with research. We have a mandate under the treaty to make sure the United States and Canada are marching in the same direction on fishery research, so we spend $2 million to $3 million a year on that.

Hon. Lawrence MacAulay: Basically, the rapport and the regulations between the two countries, does that cause you many problems or not?

Dr. Marc Gaden: It's a relatively small part of our budget, but it's a huge part of what we do in the fishery commission. So we get an awful lot of cooperation for a relatively small portion of our budget.

Hon. Lawrence MacAulay: You have three strategies for stopping invasive species. Could you just rank them in their importance.

Mr. Robert Lambe: In terms of control, do you mean?

Hon. Lawrence MacAulay: Yes.

Mr. Robert Lambe: Overall?

Hon. Lawrence MacAulay: Yes, in your opinion.

Mr. Robert Lambe: Rank the control mechanisms?

Hon. Lawrence MacAulay: Which do you think should be—

Mr. Robert Lambe: Of invasive species, okay. I know others may have different views on this. On sea lamprey, if I understand your question correctly, we have a lot of evidence that, if you cut back on control of sea lamprey, they shoot up in population extremely quickly. There's a strong correlation between increases in the population and impacts on fisheries. Unfortunately, we found that out the hard way. So the war on sea lamprey is really critical, and unfortunately it's ongoing, so that's critical.

Asian carp is obviously one that is very significant right now. Ninety per cent of the biomass in the Mississippi basin right now is Asian carp. They have simply taken over, so to think of that kind of thing happening in the Great Lakes is unconscionable. We have, as we said in our statement, 185 known invasive species in the Great Lakes. Over and above those there are zebra mussels, and we all know the story about how much consequence they've caused. There's been some success with some of those over the years, but I think there's sea lamprey, Asian carp, and then there's the rest, I would say.

Would you disagree with that, Dr. Goddard?

Dr. Chris Goddard: Could I just add one quick thing that I think is important? This is that in terms of our strategies for control of sea lamprey, clearly, the application of lampricide in streams is most important. Our second is the use of barriers to block spawning adults from reaching the spawning grounds.

Hon. Lawrence MacAulay: Is the electric barrier the best for that?

Dr. Chris Goddard: I think, in our case, no, because sea lamprey cannot jump. If you use a low-head barrier they cannot get past it, so that's very effective.

The third is trapping spawning sea lamprey.

But the point I want to make is that we had another technique that we used for about 12 or 14 years, and that was a sterile male technique where we collected usually around 30,000 males from throughout the Great Lakes basin. We would sterilize them in a facility in Michigan at Hammond Bay, which is right up here on Lake Huron, and then we would transport those sterilized males to the St. Mary's River where we would release them. We know for a fact—we did all sorts of scientific research—that these sterile males were competing effectively with fertile males, and when they did that they took the spawn from the females and the spawn died.

But what we did was we really investigated the effectiveness of that program, and what we found was that this program was just not a cost-effective program, and the commissioners made the decision this year that because it was not cost-effective we were going to discontinue that program and put the resources into trapping.

● (1635)

The Chair: Thank you very much.

Mr. Donnelly.

Mr. Fin Donnelly (New Westminster—Coquitlam, NDP): Thank you, Mr. Chair, and thank you to our presenters for your testimony. It's very interesting information.

Mr. Lambe, in your opening remarks, you referenced the natural barrier, and you mentioned that the Army Corps of Engineers has a major study going on. I'm just wondering right now if you have any idea of what the cost of this natural barrier or improving it is at this point, or is that what the study is about to reveal?

Mr. Robert Lambe: The study that I referenced won't reveal that. The study that I referenced was the assessment of the threat of arrival and establishment of Asian carp populations in the Great Lakes. You will hear from, as I understand, David Ullrich later in the week. He's the executive director at the Great Lakes and St. Lawrence Cities Initiative. David's group, in conjunction with the Great Lakes Commission, funded that study on separation, and they have three options in their study, which was released in January, I believe it was, of 2012.

The cost of each one of those options are in there. There are no recommendations, but there are three options in there. So there's an option for one barrier, and an option for two, and I believe three or four, depending on where you put them in the system. So that's the most current information that's out there in terms of the actual cost.

Mr. Fin Donnelly: Do you have an idea of the range of the costs?

Mr. Robert Lambe: Do you remember what they are, Marc?

Dr. Marc Gaden: Yes. For one option, the range is about $4.5 billion, and at the high end it is about $9.5 billion. So Mr. Donnelly, we're talking about a substantial cost to the United States should they decide to re-establish that natural disconnect between the Great Lakes and Mississippi basin.

Nobody is under any illusions that if you are to recreate a separation, which by the way is really the only way you can be sure these fish are not going to swim their way into the Great Lakes.... If they decide to move forward with that connection, we're not under any illusions; it's going to be a very costly endeavour to do so.

Mr. Robert Lambe: Part of the reason it is so expensive is that, as we were saying, it's not as simple as just dumping dirt into the canal. The canal is actually used as a major transportation system now. It's also a part of the flood management system in Illinois. The barrier has to accommodate those multi-uses that have evolved for the system over time.

Mr. Fin Donnelly: Is the U.S. government actually considering this option, $4.5 billion to $9.5 billion? I'm sure this government on the Canadian side would not be considering those sorts of numbers or even a proportion of that kind of number, even with the recent announcement.

Dr. Chris Goddard: I serve on the steering committee for the army corps study, the Great Lakes and Mississippi River interbasin study. What they're looking at now is doing an iterative program stretched over a large number of years. I don't think anyone thinks they're going to cut a cheque for $4.5 billion. They're going to do it iteratively as other things come online.

There's a major flood management program that's going on right now in Chicago that won't be completed for another 12 years. They see phasing it in, if they go forward with this project, in conjunction with things such as the TARP program.

Mr. Fin Donnelly: Thanks.

Switching gears for a second, there have been a few presentations to the committee about ballast water legislation. I'm wondering if you can provide any comment about where you feel the Canadian regulations or legislation is at compared with that of the United States.

● (1640)

Mr. Robert Lambe: Ballast water is an interesting discussion. On the one hand, I think we can say that one of the most untold success stories in recent years has been the ability to introduce effective controls for ballast water. You've probably heard from Dr. Ricciardi that the invasive numbers directly related to ballast water have gone down significantly since 2006. But as he and others in the field say, it's way too early to declare victory, because it takes time to identify invasive species. I think we've made some great inroads in mitigating the effect of that pathway. But I don't think anybody is in a position to declare victory. We need to still be vigilant of the potential that ballast water represents in terms of the introduction of damaging invasive species.

In terms of the regulations, the international regulations we look at are considered to be effective. Others argue that there need to be more effective regulations.

Part of the issue right now is that there really isn't much technology out there for enacting more stringent regulations. People will argue that this was the case in California when automotive emissions were put in place. There wasn't technology to realize the emissions called for in automobiles. It's a very different situation, of course, with the shipping industry. You're not talking about the same mass and volume, and so on and so forth.

There are various opinions on that. So it's more of a personal opinion I'm sharing with you, which is that in light of the technology that exists right now, that international standard is effective. Taken into consideration, with the control mechanisms happening in the port of Montreal right now, we have a much better situation than we did in the past.

That said, though, I would hope that by not having more stringent regulations, we don't stop the pursuit of greater technology that would provide an even greater guarantee or greater comfort that we would stop the introduction of invasives through ballast water, because we've seen the cost of them over the years.

One of the statistics that stands out in my mind, from research done in 2001, is that the cost of biological invasions globally was $1.4 trillion, in 2001 dollars. In 2009, a study was done on the cost of the destruction by natural disasters, and it was $190 billion. That was eight years after the study on invasive species. It was $190 billion versus $1.4 trillion. I think the economic cost of invasive species is not a very well-known fact. We only hear about it when we have an issue like the Asian carp, but the opportunity costs and the cost to taxpayers every day is incredibly substantial.

The Chair: Thank you, Mr. Lambe.

We'll go to Mr. Sopuck.

Mr. Robert Sopuck (Dauphin—Swan River—Marquette, CPC): I'd like to go back to your answers to Mr. Chisholm's questions regarding your advisory board and their comments on our proposed changes to the Fisheries Act. You seemed quite sympathetic to what your advisory board was saying.

I'm curious about which specific sections of our proposed Fisheries Act you are concerned about. I don't know who will answer.

Mr. Robert Lambe: It's the section that deals with habitat, so it's section 35. What would section 35 look like and how would that be enacted going forward?

There is also concern about the Law List triggers in the Canadian Environmental Assessment Act. What is going to be a Law List trigger, and what won't be, going forward? Right now, the Fisheries Act is, and if it isn't, I think there needs to be some discussion about what the effects of that would be, positive and negative.

Mr. Robert Sopuck: Have you actually read the specific section of our new proposed Fisheries Act that deals with fish habitat?

Mr. Robert Lambe: Have I? Yes, I have personally.

Mr. Robert Sopuck: Good. Of course, you know that the definition of habitat itself hasn't changed. It's just that we will be focusing on fisheries of significance for recreational, commercial, and aboriginal use. Don't you think a focus on those fisheries is warranted, as opposed to diffusing DFO's efforts across the countryside on sort of unproductive and insignificant fish populations?

● (1645)

Mr. Robert Lambe: Yes. I mean, I think it's comforting to those who are involved with the fisheries to know that the recreational fishery is considered within the same breath as commercial fisheries.

If I reflect on some of the discussion amongst the advisers, which you don't see in the resolution, there are questions about how it's one thing to have the act defined the way that it is, but how will it actually be applied? For example, if the Fisheries Act is not part of the Law List triggers, then how do we know that the Fisheries Act would be applied in the case of a major project? Right now it's applied because it's a trigger. If it's not a trigger, it wouldn't be applied by virtue of the Canadian Environmental Assessment Act, as far as we can tell. That may be incorrect, but without the discussion we don't know.

The other concern about this is that if the Fisheries Act continues to be voluntary—in other words, there is no onus on a proponent right now to come to the Department of Fisheries and Oceans and look for authorization to go forward with a project—under those circumstances, the way the Fisheries Act would be applied would be in a responsive scenario. Somebody would have to complain about a violation before it would get applied.

That's the dynamic of the concern that the advisers are bringing forward.

Mr. Robert Sopuck: Are you aware of the issues and situations that spurred the Government of Canada to make these changes to the Fisheries Act? Where I come from, in prairie Canada, there was such a draconian enforcement of the Fisheries Act—again, the infamous farmer's drainage ditch and so on.

I mean...and I question the propriety of the commission straying into Canadian federal public policy. I look at your mandate and at what you're supposed to do, and policy really isn't part of your mandate.

I would argue very strongly that our new focus on fisheries of significance should give you some comfort, because we will now be able to focus on those fisheries that actually "count": recreational, commercial, and aboriginal fisheries.

I'm just wondering whether your advisory committee.... For example, has the advisory committee, or have you, been to the fisheries minister's website where he deals with a lot of these questions?

Dr. Chris Goddard: Sir, if I may, the process that we will go through.... The advisers brought this to us on Thursday afternoon. As a result of that, staff within the secretariat will research that and provide briefing materials to the commission for a commission decision on whether they go forward and how they respond to that. We do have an obligation to respond to what the advisers recommend.

But in terms of our ability to speak to this issue, it is very clear that the Great Lakes Fishery Commission has the responsibility to advise the governments of both Canada and the United States about any issues that could affect the productivity of fish stocks of common concern.

Mr. Robert Sopuck: But that advice has to be in the context of why the Government of Canada is making these decisions.

Again, the broad definition of habitat under the Fisheries Act, the broad application of the Fisheries Act, was causing grave difficulties for rural municipalities, many in my constituency. So I would strongly recommend that you take those factors into account.

I would assume that under our new Fisheries Act you would support the provisions we're putting in there in terms of dealing with invasive species.

Mr. Robert Lambe: Yes, we will.

We're also aware of the timing of the issues to which you speak, about the way the Fisheries Act was applied. I think the way the Fisheries Act was applied five years ago was different from the way it was being applied three years ago.

So we're taking the whole thing—

Mr. Robert Sopuck: I beg to differ. I would recommend you talk to local governments about how it was applied.

Mr. Robert Chisholm: Stop badgering the witnesses.

Mr. Robert Sopuck: In terms of the new section 4.1 of the Fisheries Act, it now allows the minister to enter into cooperative agreements with conservation groups and commissions like yours, to formally enter into agreements.

Can you speculate on the kinds of agreements we could possibly enter into with groups like yours or other conservation organizations?

Mr. Robert Lambe: It's an interesting question. I think that's a good feature to be able to have the authority and the means to enter into those agreements.

You know, if we had all the resources in the world, we probably still would look for more in natural resource management—not just invasive species but natural resource management. The only way to have any degree of success is to maximize to the fullest extent possible all the resources that are out there, be they conservation authorities or federal-provincial agencies or whatever.

So that's a great thing. We just have to make sure, though, that we have as much capacity to deliver on those agreements as possible. But it's great to see those in the changes.

● (1650)

Mr. Robert Sopuck: Great. Thanks very much.

Mr. Robert Lambe: Thank you.

The Chair: Thank you, Mr. Sopuck.

Monsieur Tremblay.

[*Translation*]

Mr. Jonathan Tremblay (Montmorency—Charlevoix—Haute-Côte-Nord, NDP): Thank you, Mr. Chair.

I wish to thank the witnesses for being with us today.

I believe that to make informed decisions, it is essential to go through consultation. We must take the time to study all the new measures. I think that is imperative, especially when there are a lot of them.

Does the fact that there are going to be amendments to the protection of fish habitats and that funding for research is going to be reduced cause you any concerns, as far as the future goes? Do you fear that, in the medium or long term, this may have an impact on the fight against invasive species and that knowledge about fish habitat and fish in general may be lost? In your opinion, is it essential to have this data available?

[*English*]

Mr. Robert Lambe: It's difficult at this point to comment on the changes, because we don't know a lot of details. Going back to the discussion before, I think it would be very valuable to have further discussions about what exactly is being done. So there's not really much more we can comment on other than what we've already talked about.

Research is really critical. We've seen that the only way to mitigate some of these problems is to really understand the nature of the animals—the invasive species—that are of concern to us, to understand the kind of habitat they need, the kind of food sources they need, and so on and so forth. The more you know about that, the better equipped you are to combat it. Without research, you can't do that. Research is really critical, and obviously we want to maintain a high degree of research.

Among the partnering agencies, it's not just about government research. With reference to the previous conversation, there's research capacity within universities, within federal government agencies, within provinces, within a bigger network, and we really do need to maximize to the fullest extent possible the degree to which we all collaborate, to extract every ounce of opportunity we can out of that research capacity so that we're complementing one another.

Dr. Marc Gaden: Could I add something, Commissioner?

Research on the Asian carp issue is a case in point. Canada has a centre of excellence for invasive species in Burlington. It's a national centre, but it's located in Ontario, and it looks at, among other things, the risk of invasive species.

I've been working on the Asian carp issue for more than a decade now. The research that's coming out of Canada on invasive species, especially on the Asian carp issue, has led the discussion and the debate. When the governments, especially of the United States, sit down to decide whether to spend four to nine billion dollars to reseparate the Great Lakes and the Mississippi, a lot of that is going to be based on the research that's done through this Asian carp centre of expertise. Without it, how can you justify making the kinds of decisions that we're talking about for this particular species? That's just one example.

It's absolutely essential.

[*Translation*]

Mr. Jonathan Tremblay: Thank you.

Several witnesses have told us that it is important to act quickly when an invasive species is discovered, that this increases the chances of success. In the current context, we cannot rule anything out. You said that Canada and the United States could invest.

Do you have any suggestions for improving our ability to act quickly when a new species is discovered?

[*English*]

Dr. Marc Gaden: The first thing that has to be done is monitoring, because you have to know where these species are. You have to be able to see them when they emerge, and monitoring is just something that you have to do. It's not sexy. It's not something that governments like to devote resources to, but you do have to be monitoring and be able to see them when they're there.

The second gets to the whole issue of rapid response. Part of that requires the will or the courage to see a problem and to be nimble enough to actually do something about it. We're getting better at that. Ten or twenty years ago, to even talk about mounting a rapid response in a small area would be too bureaucratic and burdensome to even consider.

We needed to do a rapid response, for example, several years ago on a tributary to Lake Simcoe to try to keep round goby, a small invader, out of the lake. It took an awfully long time to gather the partnership and the resources between the federal government and the province to do that. So to call it rapid may be open to interpretation, but they did carry it out, and it was successful and important.

With the Asian carp it's much better. We have monitoring set up for the Asian carp issue, and we now have stockpiles of the pesticide that would be needed to do that. But it's a matter of having the will of government to do it, and they have to be able to have the successful monitoring in place.

● (1655)

Dr. Chris Goddard: With respect to Asian carp, we were fortunate about 10 years ago in that the fishery commission went to the state department and said that Asian carp were advancing towards the Great Lakes, and that if they got there, they would like to have some sort of rapid response plan on the shelf. The state department actually provided the money, and we worked through a number of committees that were out there. We took the lead in developing the rapid response plan for the treatment of the Chicago area waterway system. So when they had to shut down those electric barriers, I'm sure all of you read that there was the mother of all rapid response treatments. We were able to very rapidly apply rotenone to six kilometres of that system to ensure that species was not migrating up through the system when things were shut down. We had that in place.

There's also some very interesting work going on right now on the U.S. side through the USGS, taking advantage of an anatomical feature of Asian carp, and that is that their gill rakers are very fine so they are able to trap much smaller particles than most other fish species. So what USGS is looking at is, in a way, like our granular Bayluscide. They're actually taking rotenone and coating a little micro-matrix.

The preliminary results are really exciting. They think that for a rapid response issue, if it comes up in a small localized area, they might be able to spread these micro-matrices over the water and they will then get ingested by the Asian carp. Where other fish species will pass them through their gills, the Asian carp will trap them, and it will be lethal to Asian carp and not to other fish species.

So there are possibilities down the road for rapid response for Asian carp.

The Chair: Thank you very much.

Merci, monsieur Tremblay.

Mr. Allen.

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

Mr. Lambe, when you were talking about Asian carp, the words you used were that you have to prevent, as you cannot control. The other day when the International Joint Commission was here there was an inference, and maybe not even an inference but a direct statement, that we could get total eradication of sea lamprey from the Great Lakes.

Do you believe that it is even possible—given the statement that you made about Asian carp—that you could get complete eradication of sea lamprey, given the history?

Mr. Robert Lambe: Again, I'll defer to Dr. Goddard, but we've certainly had fluctuations in the population despite a fairly aggressive war on sea lamprey over 50-odd years now. The best we can do is keep them to within 90% of what they were at their maximum.

One of the things we haven't talked about a lot is the research. We've alluded to the research a few times. I've not been a part of any organization that does more effective research than this organization, and applies that research quickly. We're looking at a few things now that we're trying to implement or test as alternatives to lampricide. I mentioned pheromones earlier. We've been relatively successful, I would say, at synthesizing pheromones that lamprey use for migration and for reproduction, and we're testing that to attract sea lamprey into areas where we want them to go to for trapping and for false reproduction.

We're also just discovering—it's so sophisticated that we're calling it a repellant at this point—an odour that sea lamprey emit when they die. Other sea lamprey detect this and avoid the areas where dead sea lamprey are. So one of the new terms that we're using—not very sophisticated—is push-pull. If we can perfect the odour to drive them away from streams, and perfect the pheromones to attract them to streams, then we're excited about the opportunities that this represents to help control the population. But that said, it is still extremely difficult to eradicate—extremely difficult.

Dr. Goddard, do you...?

● (1700)

Dr. Chris Goddard: With the present technology we have, I think it's just not possible to eradicate the species. Even if you knock the stuffing out of them, getting the last few, or the last 20, or the last 100 would be prohibitive in terms of cost.

One of the things that we find.... We were talking about Lake Erie, and about how we thought we were going to really knock the stuffing out of them and they shot up to pre-control levels. We had a very similar thing, which is a huge problem, in that a huge barrier in northern Lake Michigan sprung a leak, and suddenly we had 400 kilometres of lamprey spawning. We had the population driven down and suddenly it shot up again.

So eradication is very difficult. The only place I'm aware of where there is a really serious attempt to look at the eradication of a species and where the research is ongoing right now is Australia. They're using a technique called “daughterless technology”, and the plan is to introduce a gene into carp such that the offspring are all male. The modelling indicates that over a period of about 40 years you might in fact eradicate carp from Australian waters. That research has been going on for a decade or so.

We don't have research like that ongoing now, but we're fortunate in that the sea lamprey is the most primitive vertebrate that is out there, so what has happened is that the National Institutes of Health, over a five- or six-year period, mapped the entire genome of the sea lamprey. We know all of the genes within the sea lamprey, and we have one of our leading scientists looking at this and trying to see if there's some way, in looking at when genes turn on and when they don't, that we might be able to ultimately eradicate them. But with our existing technology, it's just not possible.

Mr. Mike Allen: I just want to follow up on your comments, Mr. Goddard.

I understand the complexity of trying to re-establish the barrier between the Mississippi basin and the Great Lakes. You made a comment like 12 years, kind of an interim approach over 12 years.... What are some of the steps that can be taken in the interim? Obviously the carp are moving north faster than that—well, they're close now. So in the interim, what kinds of things is the corps thinking about?

Dr. Chris Goddard: Well, as we like to say, unfortunately the carp are moving at the speed of Asian carp, not at the speed of government.

Voices: Oh, oh!

Dr. Chris Goddard: Obviously there's the barrier—that's ongoing. There's another very large program they have below the existing barrier. That's a very intensive netting program whereby they're going out and removing large quantities of Asian carp in the areas immediately downstream of the barrier. The hope is that by reducing the pressure of these Asian carp below the barrier, they'll significantly reduce the opportunities for those carp to move above it.

There are also other barriers that are being put in place, such as the barrier on Eagle Marsh. There's a possibility that if there's flooding, the carp might be able to flow across water into other waterways, so they've constructed a barrier to stop adults migrating between systems.

One of the other exciting things that's ongoing right now is that the USGS has adopted a technology from the military. We're calling them “carp cannons”. It's essentially about using sound as a deterrent for Asian carp moving northward. They're in the process now of deploying these carp cannons and checking their effectiveness, as well, in trying to keep carp below the barriers. Of course, the concern is that if there's too much underwater sound, they're going to destroy whatever barrier or whatever structure is there, but it's also another promising technique.

● (1705)

Dr. Marc Gaden: I have a couple of other quick points, too, Mr. Allen.

The governments need to have the will to do a rapid response if those carp are seen above the barrier. I think that's something that we just need to be part of our control effort until this separation has occurred. Separate from the barrier, we also have to really heighten our game collectively with law enforcement, and we have to stop the movement of these across U.S. state lines.

The Canadians have done a wonderful job of intercepting shipments at the border, but that means they're getting to the border. So law enforcement has to be heightened. We need more communication among law enforcement officers. We need a memorandum of agreement, even, among the law enforcement jurisdictions so that they can share information more smoothly.

Mr. Mike Allen: Thank you.

Thank you, Chair.

The Chair: Thank you very much.

Mr. MacAulay.

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

Dr. Gaden, do you think that penalties are high enough in the U.S.? First of all, they're not catching them. Number two, are the penalties high enough? Could you just elaborate on that?

Dr. Marc Gaden: That's a great question, and it's one that's been asked by a lot of folks in the basin.

The law enforcement people you talk to will tell you that the penalties are high and that it's really an issue of enforcement. It is actually having the boots on the ground and having the folks there ready to do the law enforcement where it needs to be done.

Here is an example. It's illegal right now to move Asian carp across state lines. It took about 10 years to get that, but we finally got it a few years ago. So you can't move those fish anymore from Arkansas to even across to another state.

Hon. Lawrence MacAulay: But they do.

Dr. Marc Gaden: But they do. What that means is that the fine, or the potential of the penalty, is not deterring the movement of it. It means that the law enforcement is not as strong as it should be.

We need fish and wildlife service agents, which have the authority to do this, in the states, at the point of departure, and we need them monitoring the movement of these species. We need the agencies to then be able to share information. They should coordinate with the state troopers, for example, or even with the Canadian border officials. They need to do a much better job sharing information and being ready to stop these before they even get into the Great Lakes basin.

Hon. Lawrence MacAulay: Mr. Lambe, you indicated in your opening statement that we did not learn the lessons we should have. I'd like you to elaborate on that.

Mr. Robert Lambe: What we mean is that long after sea lamprey entered the Great Lakes system, we continue to have the introduction of aquatic invasive species at the rate of one every six or eight months, actually.

Hon. Lawrence MacAulay: So it's not enough funding, not enough education, and not enough enforcement. It's the whole gamut.

Mr. Robert Lambe: I would say that it's a combination of all of that.

Hon. Lawrence MacAulay: Okay, thank you.

Dr., do you do a lot of work with universities? Do you do a lot of research with universities?

Does all your funding come from the governments in the U.S. and Canada?

Dr. Chris Goddard: Yes, sir.

Hon. Lawrence MacAulay: Do you do much research with universities, or much with the private sector, or any?

Dr. Chris Goddard: We do research with universities on two fronts. First, as Dr. Gaden indicated, the commission has a responsibility to coordinate, conduct, and communicate research. As a component of that, we have two research programs. One is called our fishery research program, and the other is our sea lamprey research program. What happens through those is that we put out small calls for research projects through universities. The pre-proposals come in and go through peer review, and we award research contracts, primarily to universities, to do research on both fisheries and on sea lamprey.

We also have another very unique and very effective program with the universities. That is with Michigan State University in Michigan. Marc and I are both adjunct at Michigan State as well as at the University of Michigan. We have an agreement with Michigan State University and with the University of Guelph. Basically, what we've done is hire research scientists at those universities. They exist in the academic environment. The commission pays their salaries and benefits and some of their operating costs, and they do research on various aspects of sea lamprey control.

What happens is that, because they're in the university setting, they are very effective at bringing in additional research dollars from a variety of organizations. We have one star at Michigan State University who probably, over the last five or six years, in addition to the money we've provided to him, has probably brought in about $1 million a year in additional research contracts.

Hon. Lawrence MacAulay: It is from the private sector.

Dr. Chris Goddard: It is from the private sector and from funding organizations. Yes, sir.

Hon. Lawrence MacAulay: Given this research in universities, could you tell us some of the key recommendations you receive from these universities? And were some of the recommendations put forth by the universities not put in place that should have been put in place?

● (1710)

Dr. Chris Goddard: Currently the largest recommendation that we've had from universities has been primarily from the University of Minnesota and Michigan State University, and that is all of the research that is ongoing in terms of our sea lamprey pheromone work. Those recommendations have been put in place. One of the things we're looking at now is doing field trials, because we think that will significantly impact our ability to improve our trapping for lamprey.

Another very critical piece of research we've had, which has played a huge role in our program, was research that was funded at Michigan State University, again through the PERM scientist, looking at the way we made our determination on which streams we were going to treat.

You can understand you don't go in holus-bolus and treat all the streams. You want to treat the streams when it's the exact time to treat them. Some research at Michigan State University showed we could do it in a much more cost-effective way. The way we were able to roll it into our control program, saved us a great deal of money in terms of assessment.

Another really key one, which happened about 15 years ago, was a research program led by the University of Guelph looking at the barrier program and the impact that had on diversity within the system. We found that when we constructed a barrier in a stream, by and large we reduced the biodiversity within that stream by about two-and-a-half species—one of those being sea lamprey. As a result, we ended up taking a different approach to our barriers to make sure we had fish passage associated with those barriers.

Hon. Lawrence MacAulay: Do you do much work—?

The Chair: I'm sorry.

Hon. Lawrence MacAulay: Again, they cut me off. You missed a real good question.

Voices: Oh, oh!

The Chair: Gentlemen, on behalf of the entire committee, I'd like to thank you today for appearing before this committee and providing such great information for us to apply to our study as we go forward.

If you have anything further to add to any questions or comments that might have come out of the meeting today, please feel free to forward them to our committee clerk. We'll ensure they get distributed to all committee members.

Thank you very much, once again, on behalf of the entire committee.

Committee members, we'll suspend for a moment while our witnesses are excused, and then we'll move on to other business.

Thank you.

● (1710)

_____ (Pause) _____

● (1710)

The Chair: We have a couple of pieces of business to take care of today. Mr. Leef signalled to me before we started that he'd like to move his motion as well.

Mr. Allen.

Mr. Mike Allen: Are we going to be talking about two motions here today, or just the one?

The Chair: One is a notice of motion.

Mr. Mike Allen: I guess consistent with our policy in terms of discussing committee business, I move that we go in camera.

The Chair: It has been moved by Mr. Allen that we move in camera.

(Motion agreed to)

The Chair: We'll take a moment to go in camera.

[*Proceedings continue in camera*]

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