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Chair

Mr. Harold Albrecht

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● (1535)

[*English*]

The Chair (Mr. Harold Albrecht (Kitchener—Conestoga, CPC)): I'd like to call to order meeting 20 of the Standing Committee on Environment and Sustainable Development.

You'll notice that we have three witnesses with us today, and we have one witness appearing by video conference from Toronto. We're going to begin with the video conference in order to give our technical people time to change from the video conference to PowerPoint, which will be needed later in the meeting. We will proceed from the lower witnesses up, as it shows on your agenda.

From the Canadian Environmental Law Association, we have Theresa McClenaghan, in Toronto. Fe de Leon, a researcher, is with her.

From the Manitoulin Area Stewardship Council, we have Mr. Robert Florean.

From the Canadian Water Network, we have Bernadette Conant.

As an individual from the University Ottawa, we have Professor Jules Blais. He's the one who has the PowerPoint.

We're going to move quickly to the video conference.

Theresa McClenaghan, executive director, Canadian Environmental Law Association, welcome.

Ms. Theresa McClenaghan (Executive Director and Counsel, Canadian Environmental Law Association): Thank you very much, Mr. Chairman.

Thank you very much for inviting us to appear here today.

With me, as you noted, is Ms. Fe de Leon, researcher and paralegal with the Canadian Environmental Law Association. I'm counsel and executive director with the Canadian Environmental Law Association.

Canadian Environmental Law Association is a specialty legal aid clinic, a 44-year-old NGO, federally incorporated. We use law to protect and advance protection of the environment. We act for vulnerable communities and people who can't afford legal representation, and we also do test-case and systemic litigation.

We're going to address four points in our remarks today, and we will keep them brief to allow plenty of time for questions.

The first is going to deal with the importance of the Canada-Ontario agreement to reaching the goals of the Great Lakes Water Quality Agreement, and of sufficient resourcing in order to do that.

Second, we will deal with the importance of public engagement in Great Lakes issues.

Third, we'll speak about the importance of Canada's actions on toxic chemicals and their reduction specifically with respect to the Great Lakes.

Finally, we will speak about the necessity for stronger action on nutrients.

First, turning to the importance of the Canada-Ontario agreement, or COA, this agreement, along with the parallel Canada-Quebec agreement for the St. Lawrence is the primary mechanism, as we understand it, by which Canada pursues its obligations to achieve the objectives of the binational Great Lakes Water Quality Agreement.

The COA, as you no doubt would have heard by now, is currently undergoing its first ever extended hiatus since the first version was enacted in the 1970s. In our opinion, it's imperative that the Canada-Ontario renegotiation be concluded and that all of the other Great Lakes programs that Canada and Ontario pursue under that agreement continue with the support and the force of the COA.

To that end, we would also note that federal funding of Great Lakes programs that support the Great Lakes Water Quality Agreement and the COA objectives is essential. CELA is an active member of the Green Budget Coalition. In our last annual report we called for the continuation of the $48 million a year to our Great Lakes programs that the federal government currently spends across departments, according to the numbers posted on Environment Canada's website, and for the enhancement of those resources by another $25 million per year to work towards Great Lakes water quality programs.

Second, turning to the issue of public engagement, the Canadian public has a huge stake in the health of the Great Lakes. I'm sure by now you will have already heard testimony as to the importance of the Great Lakes as the drinking water for millions of Canadians, the importance of the Great Lakes fisheries, the economic importance of Canada's location on this globally significant freshwater resource, and of course its sterling role in recreation and tourism in Canada.

To that end, decision-making and pursuit of the efforts needed to either protect or restore Great Lakes water quality absolutely must include very strong public roles. We're pleased that this was strengthened in the recent Great Lakes Water Quality Agreement, and we would suggest that this must also be actively pursued in the renegotiation of the Canada-Ontario agreement. We would also suggest that a deliberate effort to ensure every Great Lakes program include a strong role for the public both in decision-making and in participation should be a primary consideration.

In the past, Great Lakes decision-making was often behind governmental closed doors, between jurisdictions, and reports were issued long after the fact. That disengages the public and makes it hard for people to appreciate what the issues are, and of course reduces support for the necessary programs.

Third, on reducing toxic contaminants in the Great Lakes, CELA has undertaken several reports and studies over the years. Our reports have examined the Canadian contribution, as well as the binational contribution, of toxic pollution in particular to the Great Lakes, and the total numbers are startling. Ms. de Leon will speak to this in moment. Efforts to reduce the release of carcinogens, hormone-disrupting chemicals and toxic substances which cause myriad other health effects to humans and to the ecosystem must be redoubled. Ms. de Leon will speak to that.

Fourth is the necessity to reduce nutrient loadings to the Great Lakes. In the short time we have today we want to highlight the continuing and troublesome issue of excess loadings of nutrients from a variety of agricultural, industrial, and domestic sources. Again, as you no doubt know, these are both from direct emissions and from dispersed non-point sources across the landscape, and interestingly, also through air pathways.

We would suggest that the federal government expand its phosphorus regulation under CEPA, the Canadian Environmental Protection Act. That's regulation 89-501, which was amended in 2009. We would suggest that additional products and additional constraints be added to that regulation. The 2009 amendments added additional dishwashing and laundry detergents to the prior constraints on liquid dishwashing detergents, but we would suggest those limits should be tightened even further.

In addition, in our view the CEPA powers could be used to require, for example, agricultural uses of synthetic fertilizers to be limited seasonally to the time of year when crops can actually take up the nutrients. We also think the COA could include an agreement with Ontario to similarly restrict sales of such fertilizers outside of those seasons, and to investigate methods to reduce transmission of nutrients through agricultural and municipal drains.

Finally, the federal funding of the environmental farm plan program has been an extremely important mechanism for individual farms to reduce phosphorus and other nutrient loadings. We would suggest that be expanded as well.

Before we conclude, I'll turn it over to my colleague, Ms. de Leon, to briefly expand on the role of CEPA and the issue of toxic loadings in the Great Lakes.

● (1540)

The Chair: I'll just remind you that you have three minutes left in your presentation time.

Ms. Fe de Leon (Researcher, Canadian Environmental Law Association): I'll just touch on a few things that Theresa mentioned.

With respect to the loading to the Great Lakes, currently there is no database or inventory of pollutant loadings to the Great Lakes. We wrote a report back in 2010 for which we measured using the national pollutants release inventory and the toxic release inventory in the U.S. to determine the partial loadings to the Great Lakes. We found that in 2007, 285 million kilograms of pollutants were released or transferred in the Great Lakes basin, which demonstrates that those loadings to the Great Lakes are large. It certainly begs the question of whether we are estimating the loadings as accurately as we can.

Many of the pollutants Theresa mentioned are carcinogenic or endocrine-disrupting chemicals, and it begs the discussion around adequate action plans to deal with those chemicals, particularly to try to reduce those levels. I would suggest that some consideration be given to an annual loading program that allows for that calculation to occur for the Great Lakes.

Also, in the past few decades the focus has been around dealing with legacy chemicals in the Great Lakes. We're talking about PCBs, DDT, dioxins, and mercury. Certainly, the programs and the regulations that have been put in place in the last two decades have demonstrated significant reductions in those levels, but what we've been seeing in recent years is that those levels are starting to plateau, which means there hasn't been much change. That said, we are still seeing mercury and PCBs being released into the Great Lakes. This is a bit of a cause for concern, primarily because we're still seeing fish consumption advisories being issued across the basin.

The intent is to try to make sure the lakes are swimmable, drinkable, and fishable. When you see levels that are still of concern for human consumption, there needs to be some attention paid to those chemicals.

Finally, I just want to put a plug in to the hundreds of new chemicals that are being detected in the Great Lakes as we speak. Many of the chemicals, such as brominated flame retardants, perfluorinated chemicals, triclosan, and even nano materials are starting to be detected in the waters of the Great Lakes.

The concern is that many of these chemicals are now coming from consumer products, and our sewage treatment plant infrastructure is not adequate to deal with these kinds of threats. They are just going to emerge, and many more chemicals are going to be detected over the next little while.

We talked about implementation of the Great Lakes Water Quality Agreement. That work, particularly around toxic chemicals, is just beginning. We won't be seeing any results in terms of a proposed list of chemicals to be addressed in the Great Lakes until the end of this year.

The question is to what degree are we willing to identify the list of chemicals that are relevant to the Great Lakes, and what kinds of actions are required to deal with those chemicals from the perspective of either preventing or eliminating those sources?

● (1545)

The Chair: Ms. de Leon, you just have 20 seconds. Do you have a wrap-up statement?

Ms. Fe de Leon: I just have one other comment that's in regard to the sustained and needed funding to make sure that toxic chemicals are dealt with adequately within the Great Lakes basin.

Thank you.

The Chair: Thank you very much.

We're going to move now to the Manitoulin Area Stewardship Council, Mr. Robert Florean, council member.

Mr. Florean, you have 10 minutes.

Mr. Robert Florean (Council Member and Technical Advisor, Manitoulin Area Stewardship Council): Mr. Chair and members of the standing committee, my name is Bob Florean and I represent the Manitoulin Area Stewardship Council, otherwise known as the MASC, and the Manitoulin Streams Improvement Association, and our community stewardship partner groups. These councils are composed of members representing the greater area public, municipalities, first nations, NGOs, and business interests from across the community serving in a volunteer capacity. Their members have a shared concern for the environment and sustainability of our rural, natural resource based, independent economy, and they all work together in a mutually cooperative and non-partisan manner to achieve positive ecological and economic outcomes for our area.

I want to tell you about the stewardship model and outline how this model benefits many aspects of our environment and dependent economies. But first, I want to talk to you about the steady decline of support for this stewardship model over the recent past years, how stewardship programs, previously undertaken by the Ontario Ministry of Natural Resources, otherwise known as OMNR, have been cut, and how this now threatens to undermine the furthering of effective community-based environmental stewardship efforts across this province and within the Great Lakes basin.

Beginning in 1996, the OMNR began its support of the Ontario stewardship program. Since that time, this program supported, but did not direct, the actions of 46 stewardship councils. Councils were supported by a full-time coordinator and $10,000 in support seed funding annually. OMNR's support, worth $5 million annually, was used by councils to leverage an additional $26 million of outside cash and in-kind contributions. These funds annually supported more than 500 projects, involving many tens of thousands of person-days of volunteer public participation. This was carried out mainly within the Great Lakes basin.

Starting in 1981, the OMNR also administered the community fish and wildlife involvement program, otherwise known as CFWIP. This program contributed $1 million annually toward stewardship projects which restored fish and wildlife resources across the province and the Great Lakes basin. It supported nearly 600 community volunteer environmental projects worked on by many tens of thousands of community volunteers annually. Most of these efforts occurred within the Great Lakes basin. I can offer an example on how CFWIP benefited our own Manitoulin streams organization via an overall CFWIP funding allocation of $35,000 between 1995 and 2006. It was able to use this funding to leverage nearly $3 million of other funding and in-kind support for its restoration efforts.

Ontario stewardship and CFWIP were very successful programs that achieved tremendous results in the Great Lakes basin. These two programs, though, have now been cancelled since 2011 by the OMNR due to budgetary constraints. Thus, a stewardship support void now exists.

In light of all this, we understand that an aging population and infrastructure are consuming most public funds. Notwithstanding, it would be short-sighted to not adequately manage the natural resources that sustain these Great Lakes economies. Engaging the public to participate in the stewardship model can bridge the gap between a need to manage the resources and a lack of sufficient public funds to do so. I am here to try to make you understand that the stewardship model works very effectively to fill the environmental sustainability void. It works because engaging members of the public to become directly involved connects their sense of pride and dedication towards successful outcomes that benefit their community areas.

The following are our local examples of the potential gains that can be made at the community level by stewardship models.

Our Manitoulin Streams Improvement Association, a not-for-profit and incorporated volunteer community-based stewardship organization, has undertaken a number of proactive steps.

It has developed a watershed restoration based strategic plan and a class environmental assessment that covers 182 watersheds of Manitoulin Island, which was formerly approved by federal and provincial agencies. That outlines the specific actions required to be undertaken to effectively carry out watershed restoration efforts.

Manitoulin Streams has secured funding and in-kind contributions valued at nearly $3.2 million to date. These funds and efforts have been used to strategically plan island-wide efforts directed at the restoration of nearly nine kilometres of streams and adjacent riparian areas to date, efforts that have achieved a quantifiable 193% average increase of aquatic life within these restored areas.

● (1550)

A strategic binational document entitled, “The Sweetwater Sea: An International Biodiversity Conservation Strategy for Lake Huron” supports continuity of the aquatic restorations being undertaken by Manitoulin Streams. Its restoration successes have garnered binational and national recognition in our being awarded the binational State of the Lakes Ecological Conference, SOLEC, award in 2008 and the 2012 Canada national recreational fisheries award.

The Manitoulin Area Stewardship Council, working with our partner the Eastern Georgian Bay Stewardship Council, is undertaking a strategically focused eastern Georgian Bay north channel aquatic and economic revitalization initiative. This strategy encompasses a geographic coastal swath that includes eastern Georgian Bay and the north channel of Lake Huron, including Manitoulin Island. This strategy will work with all of our local community partners to undertake a large-scale strategic effort based on the Manitoulin Streams success model, to strategically outline and plan specific actions needed to achieve good on-the-ground results, build the capacity and skills needed to support this strategy, and economically evaluate the benefits and effectiveness of the actions taken.

Our Ontario elk restoration committee's stewardship efforts successfully introduced the once extinct wapiti, otherwise known as elk, across Ontario and especially into this Great Lakes basin area, an effort which the Ontario government historically attempted to do but was unsuccessful in implementing. This community-based stewardship model succeeded in restoring this big game species to the Ontario landscape, raising $300,000 in public donations to achieve this. Estimates show that it would have cost OMNR 10 times that amount. Ontario now benefits ecologically and economically from this re-establishment effort.

Another example can be seen in the United Walleye Club's community stewardship efforts in the greater Sudbury district which have, since 1991, re-established fisheries across a large geographic area in lakes once considered dead due to many years of industrial sulphur fallout. The group has, through their annual cooperative efforts: cultured eggs and fish that they raise in 12 community hatcheries and 18 rearing ponds; raised and stocked approximately 3,600,000 fry and 540,000 fingerlings; expended nearly 4,500 man-days of community-based volunteer efforts; and restored and enhanced fisheries within this regional area that now contribute significantly to the local aquatic ecosystem and to the economy of this part of the Lake Huron basin.

I laud the Government of Ontario for its funding programs which support the Great Lakes basin environmental restoration efforts of organizations like ours. These funding programs include the recently announced recreational fisheries conservation partnership program and the Canada-Ontario agreement on the Great Lakes annex, which has been a very beneficial tool for us, but delays in getting this agreement in place and the limited funding amounts that COA represents can hamper positive community stewardship momentum.

Environment Canada's eco-action program has been a great funding support for aquatic restoration focus groups such as ours.

With respect to the Lake Simcoe and southeastern Georgian Bay cleanup fund, I wondered why the geographic scope of that initiative stopped just short of our own adjacent area, especially when you consider our level of strategic preparedness and expertise.

The examples I gave are only a small sample of what can be accomplished via the community-based stewardship model. Stewardship organizations can more effectively engage their communities to become more productively involved in successful resource sustainability outcomes. They are also successful in leveraging greater levels of funding from outside sources. Governments can no longer do it alone. Along with a better supported stewardship model, we can together achieve great results for the benefit of all.

Therefore, I would like the standing committee to make recommendations for further support of the stewardship model within the Great Lakes basin. The sustainability of our communities and the natural resource values we are dependent upon require this.

● (1555)

The Chair: Mr. Florean, you were right on 10 minutes exactly.

I just want to draw attention to something. I have the privilege of having your notes. Toward the end of your comments, you said “I laud the Government of Ontario”. Your notes say “Canada” and your subsequent points refer to Canada, just for the record.

All right. We will move, now, to Bernadette Conant, executive director, Canadian Water Network.

Welcome.

Ms. Bernadette Conant (Executive Director, Canadian Water Network): Thank you, Mr. Chair. I would also like to thank the honourable members of the committee for the invitation to the Canadian Water Network to speak along with my colleagues on this important topic for Canada.

I am the executive director of Canadian Water Network, which is a national not-for-profit organization. We were created in 2001 through the federal networks of centres of excellence program. As an NCE, we help convert research around major water challenges into practical solutions and real-life applications.

At CWN, Canadian Water Network, our perspective is that success happens when the right people and leading knowledge are combined effectively around clearly articulated and shared goals for water management.

Over the past 12 years of our existence we have really developed a model on that basis and philosophy that has connected hundreds of researchers from over 40 Canadian universities and international institutions.

We have over 500 partners in the private and public sectors. Those partners have collectively invested over $45 million in our efforts. We recently launched two national research consortia, established through using this end-user approach in the areas of watershed management and municipal water management.

I wanted to give you that background because it is from that perspective, of an organization that's engaged in addressing the complex challenge of making knowledge actionable within and to a diverse water community, that we're offering what we see as the current opportunity for the federal government to achieve further progress in the Great Lakes area by aligning knowledge with resources for results. Our real point is that we would like to see leadership by the federal government in establishing a binational systemic management framework for the Great Lakes.

You'll see in our submission to the committee that we have used this terminology of systemic framework several times. What I mean by that is when it comes to water, there's a high degree of interconnectedness within both the ecosystems as well as the connectedness with our economic and social systems that depend on them. So the goals and the actions are connected and highly interdependent. As a result, achieving progress requires that we take a holistic, or a whole system or systemic approach, that recognizes the interconnection between the different drivers in the system and the impacts they have.

As a preferred strategy for water management, this topic applies equally well to discussion about any of Canada's great lakes, including Lake Winnipeg, Lake Athabaska, Great Slave Lake, and Great Bear Lake. It is this direction in which the world is moving with many other constituencies. I think you will have heard my previous testimony about European water framework initiatives, or many of you may be familiar with things like the Murray-Darling basin in Australia.

As established by many witnesses at your committee before me, the Laurentian Great Lakes region is of tremendous importance to Canada and it's really the heart of the North American economy. It's not only home to over 60% of Canadians if you take Quebec and Ontario as part of the full basin, but it also represents a strong component of Canada's national knowledge resource base. It has over 77% of Canada's R and D, according to Statistics Canada, occurring within the Great Lakes basin, and it includes 22 universities and myriad other institutions.

To illustrate the importance of the Great Lakes region to the world's economy, if you combine Ontario and Quebec and the eight U.S. Great Lakes basin states and consider that as a single political entity, it would rank between the second and fourth largest economy in the world, just behind the U.S. as an entity itself and China.

Important to this discussion today is the fact that the strong functioning of just about every element and sector of that $4.7 trillion economy is dependent on water and related ecosystems.

In Warren Buffet language, we like to say that in Canada our water resources are truly our durable competitive advantage. There may be substitutes for energy, but there are simply no substitutes for water.

In response to the committee's questions that you put to us, the first being the priority issues of concern, from our perspective it's really something that Theresa talked about earlier in her comments. It's really moving from a remediation legacy to a management cleanup mindset.

Significant gains have been made in the Great Lakes cleanup since the 1972 signing of the Great Lakes Water Quality Agreement. Much of this has resulted from a focus on the major end-of-pipe, or point source contamination, waste water treatment plants, mining effluents, and pulp and paper. We need to acknowledge these successes and certainly stay the course on those cleanups.

● (1600)

While significant strides have been made by tackling those priority hot-spot issues, these efforts to some degree represent the important but low-hanging fruit in terms of this tough game, and the more complex and persistent issues of current and ongoing concern have now emerged as priorities. These concerns generally respect broader issues or more system-wide issues and often involve non-point source impacts or inputs that make a challenge.

You've been hearing about these issues and studying them. They include the resurgence of toxic algal blooms; oxygen depletion, particularly in Lake Erie; algal fouling and contamination of beaches and nearshore environments; fisheries decline; ecosystem impairment due to changing lake conditions and the issue of invasive species; the accumulation of persistent contaminants; and the general topic of the vulnerability of the full lake functions to the uncertainties that are resulting from population growth pressures, development, and changing climate.

These issues are unlikely to be resolved by maintaining a site cleanup area of concern mentality and remediation. It really requires a more system-wide management approach that recognizes the various contributing factors, but also the nature of long-term impacts of activities on watershed conditions. Inputs to watersheds in the upstream regions, particularly in groundwater, can take years to decades to show their impact on the lakes in terms of understanding conditions. It also requires a shift to more of a best management practice strategy in terms of cleanup and remediation as key to addressing the issues away from a focus simply on legacy cleanup.

Research action, certainly in parallel—and I stress in parallel, not before—can play an important part in helping to understand the system behaviour, forecast potential future conditions and scenario options, and importantly, evaluate and improve the effectiveness of practices and technologies so that we're really moving to a truly adaptive management approach.

Figure two in the briefing handout—and I brought the colour version along because it's really hard to see in the black and white—is simply there to give you an indication of the nature of the overall stresses that are present in the lakes as mapped by the Great Lakes environmental assessment and mapping project out of Michigan. That map is a cumulative map of 34 individual stressors. I think it's not a big surprise, if you consider figure one, to see the coincidence of the areas of concern with where some of those stresses exist on the map.

The important point is that such stresses are imposed by the increasing population and development both in the basin itself and frankly globally, in terms of the demands that will be put on that basin. I talked about what an important economy it is with respect to global changes and those changes being exacerbated—not caused by, but certainly exacerbated—by the issues of a changing climate, which includes more frequent extreme events. These are likely to persist into the future.

The significance of water and its connectiveness through the whole ecosystem and our economy as well means that the impacts of decisions we make or actions we take are similarly connected: when we pull on a string on one end, we're likely to affect the pattern and sometimes unravel the stitches on the other side. A practical approach to initiating a management system in the Great Lakes needs to consider the full range of the important risks and opportunities related to water. I have a couple of examples to illustrate that point.

One is risk to municipal water supplies. If the occurrence of blue-green algae blooms were to threaten the removal or shutdown of a major drinking water intake for a major city, or if a storm potentially damages that infrastructure, that represents a substantial threat to municipal drinking water supplies, but not just in terms of public health; there are a lot of industries that also rely on it.

Another is manufacturing. Food processing is the second-largest manufacturing sector in Ontario, with $37 billion in sales in 2010 involving 114,000 people. Over 70% of that industry relies on municipal infrastructure.

The flip side of the risk is opportunity: adopting innovative techniques and technologies and resiliency in communities. ZENON and Trojan are leading companies developed in the Great Lakes basin. In 2004, Ontario revenue from water-related goods and services was $5.2 billion and 900 water companies. That's still a small part of what's actually now calculated to be about half a trillion dollar global market.

The horticultural sector generated $5.7 billion in farm cash receipts across the country. The ornamental horticultural sector is the largest sub-component of that. These sectors are currently seeing significant growth and opportunity, serving expanding market needs that could grow, particularly with stress in other areas, such as the Imperial Valley, but they're also facing risks when it comes to dealing with waste water or the threats of climate change.

As your committee has been discussing with numerous witnesses, there's a whole array of organizations, 13 Canadian federal and 11 provincial agencies on the Canadian side, and similar on the United States' side.

● (1605)

You can see it's a complex solution that needs an alignment around core goals.

To sum up, given the breadth of the interconnectedness of these issues, we need more effective alignment of resources that can result from establishing a base framework that supports more systemic management as opposed to location-focused hot spots, defines the desired actual future state, the innate characteristics of that state, and ensures focus of resources that stay the course and maintains priorities.

In conclusion, the good news is that the institutions and the instruments through the IJC, the Great Lakes Water Quality Agreement, and the COA actually exist and we have the resources. The federal government could then take leadership in developing a binational Great Lakes basin framework.

The opportunities exist, Chair, and it's leadership and sustained support that are the ingredients most required for success.

The Chair: Thank you, Ms. Conant.

We'll move now to Mr. Blais.

Dr. Jules Blais (Professor, University of Ottawa, As an Individual): My name is Jules Blais. I'm a professor of environmental toxicology at the University of Ottawa.

I took a little bit of a different approach from my colleagues. I put together a slide presentation that is really just intended to inform on the sorts of issues that we've been seeing in the Great Lakes, starting since the 1970s. I will walk us through some of the issues. If there were questions that were to be specifically addressed—

The Chair: Could I just ask you to move over toward one of the microphones. We're not picking you up as well as we could.

Dr. Jules Blais: I have here a series of slides that review some of the issues we've been seeing since the 1970s.

It all really started on Scotch Bonnet Island on Lake Ontario. That is where we really started to see the effects of environmental pollutants in the Great Lakes. This was work done by Environment Canada scientists back in the 1970s, first when they discovered 100 nests, but only 10 young. This was the first sign of the kinds of serious problems that began to emerge in the 1970s and that really began to be noticed in the 1970s.

We have since seen the effects of DDT and the impacts on eggshell thinning and the deformities and birth defects in birds that became prevalent and well known in that part of the world, along with some even more pronounced effects, like crossed bills in cormorants. That was not a rare occurrence back in the 1970s. These were the sorts of things we were facing back in those days.

When we looked at some of the sites that tended to have more of these contaminated effects versus ones that had less contaminated effects, we saw that places like the Detroit River and western Lake Erie were some of the more contaminated areas, places like the Hamilton harbour, whereas in the northern lakes we were seeing sites that were much less contaminated.

On this slide, you can see that some of the most contaminated sites were in places around Lake Erie, the Detroit River, and Lake Michigan, whereas some of the less contaminated sites were focused around places like Lake Huron and Lake Superior.

When we look at some of the kinds of things that we see in places that are more contaminated, we have one example here from the St. Clair River that shows specific effects that are quite clearly from contamination, right downstream from Sarnia and some waste water treatment plants around Stag Island. We can compare that with places like Port Lambton, which is a reference site.

One of the factors we see in some of these contaminated sites includes effects like—I'm a scientist, so of course I'm going to focus on the science side of things—the feminization of fish, which is most pronounced in the most contaminated sites, such as the St. Clair River. One of the things that is apparent is the fact that we see this biomarker called vitellogenin. It's essentially an egg yolk protein that we typically see in females but we don't ever see in males unless they are exposed to environmental estrogens.

As you can see in this slide, males are showing measurable levels of this vitellogenin, an egg yolk protein, in their blood. This is a very clear indication of the feminization that takes place in some of these contaminated sites. It's a product of environmental estrogen exposure. These are chemicals that are coming from industrial sites and from residential waste water treatment plants.

Another expression of this feminization is seen in what we call intersex, which is the presence of female cells in male testes. Shown in this slide is an oocyte, which is an egg cell that is found in males' testes and is another very clear indication of feminization.

Those are some of the manifestations of environmental estrogens that we see in some of these contaminated sites.

Another factor we've been focusing on is what we call biotransport. Historically, contaminants were released into the lakes. Since the 1970s, some of those contaminant levels have come down, but what we find now when we look at the distribution of these contaminants is that they're not so much distributed near where we find industrial sites, but are more closely linked to the life cycles of some of these animals.

● (1610)

One of the examples I have here is of migratory salmon, which spend most of their life and acquire most of their body mass in the lakes, but then they swim upstream to spawn and they transfer many of those contaminants to those resident fish in their spawning lakes.

An interesting thing that we now see in the Great Lakes is migratory animals like salmon that swim upstream to spawn. They contaminate because they accumulate contaminants from the lakes. They transfer these contaminants such that the resident fish in some of their spawning lakes are now in some of the most contaminated places that we see. We call this a biotransport.

I have an example here showing the PCB concentrations in stream resident fish from reaches with and without salmon spawners. This is a study from the United States. You can see in reaches of the river where there are no salmon spawners, the resident fish have much lower contamination levels, but they have 20 to 50 times higher contamination in the reaches of the streams where salmon are spawning. We call this biotransport a biovector transport of pollutants, and we see this in the Great Lakes.

PCBs have come down to maybe 5% of what they were back in the 1970s, but we can't make that generalization across the board because there are locations—whenever we make a generalization, we have to list a number of caveats because generalizations tend to be wrong. One of the things we see here when we look at the distribution of these contaminants today is that they aren't widely distributed across these lakes, but we do see hot spots of contamination, not near industrial sites but near sites where salmon are spawning. This goes to show that when we release chemicals into the environment, ultimately they become part of that natural world and they take on a life of their own.

To summarize some of the important things that have been collected over this time period and some of the important sources of information that we have, a survey has been done of herring gulls since the early 1970s, and this provides us with a history of contamination spanning different areas of the Great Lakes. Our best indication of the history of contamination is provided by this tissue archive, which is stored at the National Wildlife Research Centre here in Ottawa. There are tissue archives that allow us to reconstruct a history of contamination over time.

If we want to see the history of contamination, we have that tissue archive available to us so we can track the movement of contaminants that we haven't even discovered yet.

Some of the oldest annual wildlife contaminant monitoring programs in the world are found in the Great Lakes. Environment Canada is credited with having the foresight to provide us with these tissue archives.

Some of the spatial analysis shows that the cleanest eggs and the cleanest tissues we tend to find are in places like eastern Lake Superior, eastern and northern Lake Huron, whereas the dirtiest sites are in places like the Detroit River and western Lake Erie.

Our temporal analysis, our historical analysis, is showing that many of the legacy contaminants that produced some of the disfiguring effects that I showed early on have declined. Chlorinated chemicals have declined by over 90% since 1974, but we add the caveat that some places are still showing high contamination because of migratory species that can funnel contaminants and maintain them at high levels. Mercury has declined, but only slightly, and there are emerging chemicals, like the brominated flame retardants and perfluorinated acids, and the personal care products and pharmaceuticals that we are starting to learn more about.

● (1615)

We do see health effects to this day in the more contaminated parts of these lakes, relating to things like immune response, sex ratios, and feminization as shown by things like vitellogenin and embryonic viability, which show association with more contaminated sites.

The Chair: Thank you very much, Mr. Blais. We've reached the end of your time, and we're going to proceed to seven-minute rounds of questions.

I want to remind committee members that we are reserving some time at the end of the committee for committee business.

We have one question of clarification that Megan Leslie would like to ask. She was not able to hear totally one of the comments of Madam Conant.

Ms. Megan Leslie (Halifax, NDP): Thank you very much. I just want to clarify. Did you call it a “binational systemic management framework”?

Ms. Bernadette Conant: That's right.

Ms. Megan Leslie: Okay, thanks.

The Chair: We'll move now to the Conservative side, and Mr. Toet for seven minutes, please.

Mr. Lawrence Toet (Elmwood—Transcona, CPC): Thank you to our witnesses today. This has been very helpful for us going forward.

Mr. Blais, I was very interested in what you brought forward to us today. As you say, it's different from anything we've had come to us so far.

At the end of your presentation, you talked about the legacy contaminants declining over 90%. Can you talk to that a bit? I don't know whether in any of your research you've been able to determine the reasoning for this. Has it happened through a lot of the work done through—

Dr. Jules Blais: The contaminants that have declined are mostly the chlorinated chemicals that are now regulated under the Stockholm Convention. There's an international treaty now to get rid of things like PCBs and what they used to call the dirty dozen, mostly chlorinated chemicals that had been banned in Canada. The new production of PCBs has been banned in Canada for the last 30 or so years.

PCBs have been on the decline. DDT has been on the decline for similar reasons, and there's a whole list of other ones. Some of the chlorinated pesticides such as chlordane have been on the decline. Some are on the way out. Dioxins have been in decline. But there are others that are holding steady. Mercury is one. Then there are others that are on the rise, and those tend to be the chemicals that replaced others. When we got rid of PCBs and we got rid of certain chlorinated chemicals that were used as flame retardants, we replaced them with other things, such as brominated flame retardants, so there's polybrominated diphenyl ethers and a whole range of other flame retardants that have been used to replace them. Others, such as the perfluorinated acids, are also on the rise. But the chlorinated chemicals that have been banned in Canada and the United States since the 1970s and 1980s have been declining significantly.

Those crossbill deformities that I showed at the outset were linked to PCBs and hexachlorobenzene. We don't see those deformities anymore.

● (1620)

Mr. Lawrence Toet: Thank you. That's good.

Actually, the comment on the crossbill reminded me of my golden retriever trying to save the fish in our pond from a cormorant a couple of years ago. I think my golden retriever was looking about as twisted up as the cormorant did after chasing the thing for about 15 or 20 minutes and just having no success.

I have a question for you, Mr. Florean. You talked about the elk being reintroduced in Ontario. One of the comments you made was that OMNR was unable to do it. You also said that if it had done it, it would have cost much more than what it cost the local organization to accomplish what it did.

I'm just wondering what you would attribute that to. Why was there a difference in the success of the government organization and that of the private organization that was doing this, and a difference in the cost effectiveness of what they did as well?

Mr. Robert Florean: First of all, I want to quantify that I completed a career of 36-plus years with the Ontario Ministry of Natural Resources in 2011.

The stewardship component of it is very basic. What it does is it pulls everybody together, and you have people within the community not only contributing their time, but also they're contributing resources. They did fundraisers that raised tens of thousands every year. They captured the interest of people.

If the OMNR have to do it, they have to do it within the confines of an established bureaucracy. I can't make it any more simple than that. There's a process that needs to be followed and certain individuals must be incorporated into that. This doesn't circumvent them. They were still there as your science background and basically there was an environmental support as well

On the example I gave with Manitoulin Streams, if we had done it through, let's say, solely a government model, it would cost a lot more. But when you have a vested interest within a community to accomplish something, you really give it.

Mr. Lawrence Toet: Ms. McClenaghan talked a little bit about public engagement. We seem to have heard that testimony over and over throughout the weeks of this study, of public engagement being involved. You talked about many different projects being done on public engagement. We've heard from many witnesses here about public engagement and actually how that drives success.

On the basis of that, Ms. McClenaghan, I was hoping you could clarify. When you talk about public engagement, do you want to see an enhancement of that public engagement? When you made your statement, I was almost getting the impression that you were giving us the idea that there has been a lack of public engagement or no public engagement. As I say, we've heard constant witness testimony throughout this study on the public's input and the public's participation.

Ms. Theresa McClenaghan: Right, absolutely, I would echo Mr. Florean's comments about the importance of the stewardship model. I actually sat for six years on the Brant stewardship committee in the same kind of framework that he was describing. I would completely echo what he said. It was an extremely important way to deliver the objectives of the Canada-Ontario agreement, and that's true across the board.

Where we did see some differences and insufficient public engagement was around the decision-making, in particular, and the timely release of the results of monitoring about whether the objectives under the Canada-Ontario agreement and the Great Lakes Water Quality Agreement were being met. It had started with a lot of public engagement, for example, in the remedial action plans and so on. It had become quite bureaucratic over the years and there were often long delays in getting those results out.

The new Great Lakes Water Quality Agreement does redress that somewhat, we're glad to see, and I'm just saying it needs to be a deliberate effort in every Great Lakes program.

● (1625)

The Chair: Thank you very much.

Thank you, Mr. Toet. Unfortunately, your time is up.

We'll move now to Ms. Hughes, for seven minutes.

Mrs. Carol Hughes (Algoma—Manitoulin—Kapuskasing, NDP): Thank you very much. I'm glad to be at this committee. This is certainly a subject that's near and dear to my heart. The fact of the matter is Algoma—Manitoulin—Kapuskasing has not only Lake Huron, but Lake Superior as well. I think your testimony is quite enlightening.

Mrs. Conant, you indicate in your documentation about the R and D investment, that a total of 77% of Canada's research and development, R and D, occurs within the Great Lakes basin.

I'm just wondering, has there been a reduction in that funding?

Ms. Bernadette Conant: That's a Stats Canada number, so I was speaking to the numbers in terms of my personal experience with it. That's not separated out in that chart in terms of the federal or Ontario funding per se. That statement is in taking the whole basin, so Canada and the U.S. together, and including the private and public sectors.

I don't have the numbers in front of me, but I think there are some in the report that I gave you that speak to the research and development funding by sector, by federal and provincial sector.

Mrs. Carol Hughes: Yes, it says $6 billion, including both federal R and D and support for university-based research.

Has there been a reduction in funding in R and D? We know there has been in other departments and I'm wondering about this particular one here.

Ms. Bernadette Conant: The statistics that it's taken from.... If you look over time, it's one of those questions where it depends on how you do the numbers, in terms of corrected for a given year. In general, the overall funding for R and D went up slightly in the late 2000s, and then I think it went down slightly over the last few years. There's been a shift in where that funding occurs. I think if you divide it by per capita then you do see a bit of a decrease over the last few years. I can find the numbers for you. They're in that same Stats Canada package. There has been a bit of a decline, but not a huge one.

Mrs. Carol Hughes: Okay.

Ms. Bernadette Conant: That speaks to the overall investment that.... One of the concerns is there has been a big decline in terms of benchmarking Canada's performance against other countries in the OECD and elsewhere, in the ability to leverage that private sector component on top of the public. That has certainly been one of the concerns. It's one of the concerns behind why the networks of centres of excellence program exists. It's to try to improve that collective private sector and public sector investment in R and D.

Mrs. Carol Hughes: Thank you.

Mr. Blais, you indicate that there are emerging chemicals and you mentioned some of them that you are seeing.

I'm just wondering if there are certain areas that you.... You indicated down by the Detroit....

Dr. Jules Blais: The Detroit River.

Mrs. Carol Hughes: Do you specifically know where these are actually coming from? Is it from an industry?

Dr. Jules Blais: No, a lot of these emerging issues are like flame retardants and these perfluorinated carboxylic acids, and that sort of thing. They tend to be found around urban centres.

They're products that we use. The brominated flame retardants are used in computers. They're used in house products. They're used in building materials.

Mrs. Carol Hughes: Could you provide a list to the committee of some of the highest ones that we should be concerned with?

Dr. Jules Blais: Yes, certainly. I think that—

Mrs. Carol Hughes: Would you be able to table that with the committee? You don't have to do that right now, but if you could table it with the committee, I think that would be of interest to us because of the impact it's having on the Great Lakes.

Mr. Florean, Manitoulin Island, it's God's country. We know that the lake levels there have been impacted quite a bit, and that certainly affects the fisheries and the economy.

How can we quantify the economic benefits, the impact it's actually having on the economy, on the fishery, and on the Great Lakes as a whole? Is it important for us to start tackling that now?

● (1630)

Mr. Robert Florean: I'll give the example of a study undertaken by the Washington, D.C. based Brookings Institution and more recently in partnership with the University of Toronto based Mowat Centre.

They did an evaluation within the context of what's called the north coast initiative of the United States, all the Great Lakes along their northern boundary. Their economy has declined to the point where all this industry has left for states and outside of country where it's more economically viable for them. The Great Lakes were in great decline, so the Brookings Institution was tasked to do a north coast initiative strategy. It outlined a number of things to revitalize that area because the infrastructure still existed. I'm using this as an example because it's right there; it's just across the border and it's the same context.

The Great Lakes are very important because you can attract industry to the zone. You have 18% of the world's fresh water sitting in that one basin. You also still have infrastructure: schools, roads, hospitals, commercial venues, etc. Everything was contingent upon the health of the Great Lakes, so they carried out a Great Lakes restoration study. It demonstrated that for an investment of $26 billion in that entire coastal area, including upgrading of sewage infrastructure, restoring up to 500,000 acres of coastal wetlands, eliminating dams that were impeding fish migration, and cleaning up toxic blobs in the St. Clair River, they would garner $50 billion in large-scale regional benefits and $30 million in that immediate area.

The Mowat Centre has been working with them and trying to quantify the benefit of these actions. We have been impacted by lower water levels In our area. If you can believe this, the north channel of the eastern Georgian Bay coastal area has among the most diverse and most productive fish habitat in the Great Lakes. With the decline of the water level, suddenly a lot of these habitats in which fish spawn and which they need as rearing habitat are gone. That productive cycle is eliminated.

The Chair: Thank you for the question and the answer.

Mrs. Carol Hughes: I was starting to have fun.

The Chair: It was so exciting, I wanted him to go on forever.

We'll move now to Mr. Storseth, for seven minutes.

Mr. Brian Storseth (Westlock—St. Paul, CPC): Mr. Chair, I'll be sure to share any time I have left with Mr. Williamson.

Mr. Florean, the model you've been discussing with regard to stewardship programs seems to be very successful. You mentioned the cost being less compared to a government model that you have a lot of experience with. How's the effectiveness?

Mr. Robert Florean: There were 46 councils across the province of Ontario. Most of them focused within a county basis. I happened to work on the eastern Georgian Bay and the Manitoulin councils. The cost including the salaries, office space, meals, and everything, of these full-time coordinators and their support, plus the $10,000 of seed funding, totalled approximately $5 million across all the council areas.

Each council consisted of 10 to 15 people, and these were key people from within their respective communities. They came from across the communities. They weren't directed by OMNR but some guidelines were set and the council coordinators that were provided to them were the people who did their bidding. They got everything and made sure they were within the confines of legislative and policy standards. They garnered $26 million of cash and in kind from outside sources, so $5 million turned into $26 million.

They were able to beat the bushes: corporations, members of the public, fundraisers on an annual basis. Unfortunately, we just vaporized under budget cutbacks.

● (1635)

The net benefit is—I gave you the examples of those other groups, such as the one for elk restoration, the United Walleye Club, or whatever—that they in turn multiplied the effects, because one would engage 10, and 10 would engage 10 more.

Suddenly the community became engaged, instead of sitting back and waiting for big brother government to do it for them, as that wasn't happening. What was happening, though, was that governments only had the capacity to react to issues—that's where we ended up—and they have even less at this point in time.

You engage and work together with the public, support them with enough resources to maintain them and move forward, and you achieve some very solid results.

Mr. Brian Storseth: Community ownership would be far greater under this model. It would increase the educational component for youth and everybody else.

Mr. Robert Florean: It's all incorporated. It's all part of the whole process.

Mr. Brian Storseth: What about the effectiveness of the program itself, comparatively? I'm not talking just about dollars and cents but about actual achievement.

Mr. Robert Florean: As I mentioned, in our case we have restored Manitoulin Island. You have to look at Manitoulin. It's a big slab of limestone about 160 kilometres in length, and it slopes southwards in a big, gradual slope. All sorts of cold-water streams emerge from it. We represent 30% of the Ontario side of the main Lake Huron basin.

Those fisheries.... We did studies in 2000 that showed that 70% of those streams were negatively impacted by 150 years of land use practices. Some of them didn't even function anymore. Today, after all the strategic planning, we have entire rivers monitored and assessed, and for every linear metre along that river, we can tell you whether it needs anything done and how much it would cost per linear metre.

In the nine kilometres of in-stream habitat we have managed to do to date—nine kilometres plus adjacent area up to 30 metres away from the stream, so that there's a riparian buffer—we helped to work with local agricultural producers, who retired those portions of land and provided fencing for them and did all the work. We're getting a quantifiable 193% increase in aquatic life. That includes fish. That in turn goes back to restore what is in the Great Lakes.

Also, we are tourism dependent, and this means that people start coming. They're starting to say, “Wow, this is incredible; it must be the work these people are doing.” These are outsiders who come from all over.

Mr. Brian Storseth: The community pride helps.

Ms. Conant, you talked about some of the largest contributing factors, population growth pressures being one of them. Could you expand on that a little bit? It's something we've been looking at in this committee.

Ms. Bernadette Conant: Sure. We were parsing it in two ways. You have projected population growth in Canada. Also, my colleagues in the water community are always talking about the fact that even in the global sense, Canada has a lot of water. Most of the population is in the south, concentrated in certain areas. We create scarcity through increasing demand, basically by increasing industry and development, sometimes a bit above the carrying capacity of local water resources.

There are the local pressures that will come with increasing population growth and thus development in any corridor. In the Great Lakes basin, there are many discussions about protecting green space, creating corridors. Those pressures will continue.

The other part that I spoke to is the larger picture; that is, we're part of the interconnectedness of global population increase. There is an expectation there will be nine billion people by 2050. I think by 2030 it's already projected to be eight billion. The expectation is that if we go on as we are doing, we will require 40% more delivered or developed water supplies globally to sustain those populations.

It's not just the population growth itself, but the fact that so many of the world's economies, particularly the BRIC nations, are rising in economic status. When you rise in economic status, that means the diet changes and the expectation of consumer consumption is changed. It's not just that there are more people on the planet, but now they're starting to use water resources as we are in Europe and North America and the developed world.

One thing that is part of the durable competitive advantage in the way we talk about managing our water well so that we're able to deal with those population increases is what I talked about. It's an economic reality that there are products and services needed to serve that emergent world.

I may have the numbers wrong, but I have a report which says, I think, that Canada is one of the top five agricultural exporting countries in the world. What distinguishes us is that a couple of those are right up against the top.... Australia is right up there, but they have basically maximized, with the droughts they have, what they can produce. Canada still has quite a long way to go.

The expectation that literally feeding the world—producing goods and services that other countries have difficulty producing because they don't have the benefit of these water resources—is likely to be the larger pressure and opportunity or benefit for Canada in terms of population increase. We see that it is going to require good stewardship to take advantage of it.

● (1640)

The Chair: Thank you.

Mr. Storseth, I want to commend you on your generosity. You left Mr. Williams a negative 1.2 minutes.

Mr. Brian Storseth: Well, I notice that he ran when he saw his time was coming up.

The Chair: We'll move now to Mr. Scarpaleggia.

Mr. Francis Scarpaleggia (Lac-Saint-Louis, Lib.): I have found over the years in looking at this issue that water is such a diffuse issue—I mean, so many people are working on it in different capacities and at different levels of government and at the grassroots level—that whenever there's a problem such as with water quality in the Great Lakes, which I know is a big problem, there is no lever you can pull on to say, “We'll do this and solve the problem.” The issue seems to be coordination, but there's so much to coordinate that we can't seem to wrap our minds around it.

As I understand the problem in the Great Lakes, it's that there are many components. One is waste water, which contributes to pollution in the Great Lakes.

Last week, I went to see a presentation by one of your colleagues —was it Dr. Blais?—who came to speak to us. She is a biologist at the University of Ottawa. She said that really it's not good that we still have waste water problems, but they seem to pale in comparison, if I understood her correctly, with the problem of phosphorus coming though agricultural runoff.

I was interested, Mr. Florean, to hear what you had to say about how you have improved streams and prevented agricultural runoff.

Earlier in the presentation today, someone mentioned the federal environmental farm program. What is it, and how does it link with efforts such as yours and those of other watershed groups and with provincial regulations regarding agricultural buffer zones and so on?

Can you give me a picture of how all this might work? Is this federal environmental farm program useful, or is the government going to say soon that it's better that the provinces do it?

Ms. Bernadette Conant: I have a little familiarity with it. I would turn this over to Theresa, who can tell you more about the details.

I can tell you, from working between the academic and the agricultural community, that in just the kind of circumstance you're describing, people are always asking themselves, “If I can't get my hands around all of it, is there a piece I can do?” This is really the guts of the stewardship movement: people can see the goal and align around the goal.

I'll pass this to Theresa, but in my experience of dealing with the farm communities and with questions about best management, the environmental farm program was one of the programs they were happiest with and proudest of. In terms of being able to demonstrate that their intent was to be good environmental stewards, it gave them a framework they felt they could use.

Theresa, could you maybe talk to the specifics of the program, through the chair?

● (1645)

Ms. Theresa McClenaghan: It was primarily a federal program, but it was undertaken under federal-provincial arrangements, and then other programs were often leveraged, such as the Canada-Ontario agreement or, in Ontario, source water protection. Over the years, extensive efforts were undertaken that alleviated water pollution into waterways from agricultural and other non-point sources.

I agree with Ms. Conant that it was perceived to be a huge success. My understanding is that it doesn't have the same level of funding, and I would strongly encourage that this model be pursued again. It is a stewardship model, which Mr. Florean has been discussing. I think everyone who was involved would agree it was very successful.

Mr. Francis Scarpaleggia: It was a funding and stewardship program sharing best practices.

In terms of industrial pollutants, the legacy pollutants are down, which is a good thing, but there are new pollutants coming on stream. At one point I remember reading that there were 23,000 chemicals in commerce in Canada and—correct me if I'm wrong—there were only plans, under the chemicals management plan, to manage 10 of these 23,000 chemicals. I remember from when they were doing the CEPA review there were so many chemicals in the system and yet we only have toxic management plans for a limited number, and it takes a long time to evaluate all these chemicals.

Is my understanding correct?

Ms. Fe de Leon: I'll take that question.

You're right, Francis. The categorization process that was required under the Canadian Environmental Protection Act reviewed the 23,000 chemicals that were on the domestic substances list. From that, the seven-year legal obligation was concluded in 2006, and about 4,500 emerged as chemicals that needed additional assessment. The chemicals management plan currently is dealing with what they consider are medium priority chemicals.

Mr. Francis Scarpaleggia: The 4,500?

Ms. Fe de Leon: In regard to the original 100 or so chemicals that went through the industry challenge, the government is currently looking at them from the perspective of whether they meet the criteria for being toxic under CEPA, and it is now developing a risk management plan to apply to some of those chemicals. For example, the brominated flame retardants came through that process. Some the perfluorinated chemicals have come through the process. In those situations, there have been regulations put in place. But certainly, in the context of the Great Lakes, those assessments that were done under CEPA didn't look specifically at the impacts to the Great Lakes; they looked at them nationwide. There's some value in—

Mr. Francis Scarpaleggia: Is there a lot of work that remains to be done in terms of the chemical management plan to better regulate those chemicals that are impacting the Great Lakes?

Ms. Fe de Leon: Well, that's not the intent of CEPA, but certainly that's what we'd like to see in the context of the Great Lakes, yes.

Mr. Francis Scarpaleggia: That's interesting.

How much time do I have left?

The Chair: You have 40 seconds.

Mr. Francis Scarpaleggia: Okay, I'll give them to Mr. Williamson.

The Chair: We'll move ahead to the next round then, if you're through, Mr. Scarpaleggia.

We'll move to the five-minute rounds, starting with Mr. Bevington.

Mr. Dennis Bevington (Western Arctic, NDP): I'm interested in getting into the same topic as Mr. Scarpaleggia did on the contaminants, because we are dealing with water quality here. We've heard a lot about nutrient loading, a lot about the impact of agriculture, and maybe we'll get to that a little bit later.

When it comes to these new chemicals, some of them are bioaccumulators and some are just present in the water course. Is that correct?

Dr. Jules Blais: The persistent organic pollutants are the ones that are toxic bioaccumulative and persistent. Some substances are not very persistent; they don't stick around for very long. Others are much more persistent and bioaccumulative, so we tend to give them more attention.

Mr. Dennis Bevington: Are you familiar with PFOS?

Dr. Jules Blais: Yes, I am.

Mr. Dennis Bevington: Is that present in...?

Dr. Jules Blais: Yes. PFOS was the major ingredient in Scotchgard prior to 2001. It was thought to be well contained. It was thought to be not something that would be subject to long-range transport. Then there were studies done that showed very high levels of PFOS in polar bears.

In 2001, 3M took all the Scotchgard off the shelves and reformulated it to remove PFOS. It had all of those criteria. It turned out to be persistent, toxic, bioaccumulative, and subject to long-range transport.

● (1650)

Mr. Dennis Bevington: Where is it now in the...?

Dr. Jules Blais: Well, it's come down. PFOS has become dramatically reduced since then, but it was the company that produced it that willingly took it off the market.

Mr. Dennis Bevington: What about TFA, trifluoroacetic acid? It's more in the water than in....

Dr. Jules Blais: Right. I don't currently know the situation for TFA.

Mr. Dennis Bevington: Are you familiar with it at all, Fe?

Ms. Fe de Leon: I'm sorry, I don't think so. I'm thinking of the perfluorinated acids, which I'm more familiar with. I know the emerging issue with a lot of these persistent toxic chemicals is that even once there's a regulation in place to eliminate and phase them out, the issue then becomes around stockpiles or POPs-containing waste, so the chemicals are still in the environment and they build up in the environment. It's not specific to the chemical you're referring to, but certainly with regard to perfluorinated chemicals, it's an issue that's emerging.

Mr. Dennis Bevington: Are those airborne contaminants that can come from long-range transport anywhere in the world?

Dr. Jules Blais: If I'm recalling it correctly, I think TFA is trifluoroacetate. When, under the Montreal protocol, we eliminated the CFCs and replaced them with HCFCs, trifluoroacetate started becoming detectable in rain because of what we replaced the CFCs with in refrigerants. So I believe it comes from refrigerants, and it is on the rise. Its effects are not too well understood, if I'm recalling correctly.

Mr. Dennis Bevington: Is it on the rise within the Great Lakes as well?

Dr. Jules Blais: In my understanding. That is my recollection, but I would want to confirm that.

Mr. Dennis Bevington: Getting back to nutrient loading, because I think this is one of the more serious problems that everyone's trying to deal with, it just seems that we have a voluntary method of dealing with agriculture right now, in terms of encouraging.... Do you think that is ultimately going to be successful in dealing with the problem we have with nutrient loading in the Great Lakes, or should we be moving to a system where there's regulation, where there's polluter pay, and where there's an analysis of farm practices to determine those types of things?

I'll open it up to anyone.

Mr. Robert Florean: If I might just give one example, there's a number of ALUS trials happening across Canada. ALUS means alternate land use services. Some members from out west would be familiar with them.

The Chair: Environmental goods and services were often—

Mr. Robert Florean: Yes. What these programs are doing.... Mostly, they started out in western Canada, with respect to duck production and wetland protection. There's a great trial happening in Norfolk County just south of your riding, where they are compensating agricultural producers to retire enough land adjacent to waterways that are feeding into Lake Huron and to change their practices. Some of them are switching to tall grass prairie species, for example, versus the alfalfa clover types, and even changing to types of longhorn cattle, Texas longhorns.

● (1655)

The Chair: Thank you. You can pick up on that with a future questioner, maybe, but we are well over time.

We're going to move now to Mr. Toet.

First, I should mention that Ms. McClenaghan will have to leave at around five, I think, so if she leaves, it's not because she's offended by any questions.

Thank you, Ms. McClenaghan, for being with us today.

Ms. Theresa McClenaghan: Thank you, Mr. Chairman.

The Chair: Ms. de Leon will continue in case there are questions directed your way.

Ms. Theresa McClenaghan: That's right.

The Chair: Thank you.

Mr. Toet.

Mr. Lawrence Toet: Indeed, we are quite familiar with ALUS and actually studied that quite comprehensively when we were working on the national conservation plan study that we brought forward. I'm looking forward to that coming through in the next little bit. It definitely plays a role and has a place in anything to do with habitat stewardship, but it also has a major role to play in some of the things we can do with the Great Lakes and their rehabilitation and protection.

Ms. Conant, in your briefing to us, you talked about the importance of the Great Lakes region. You talked about the GDP and the size of the economy that it contributes, etc., which is all very true, but is not a large part of the challenge this area is facing because of this?

Ms. Bernadette Conant: Sure. The idea of contamination where there's a lot of development and there's a lot of activity is what's facing us and facing Manitoulin Island in terms of this development. It's a matter of scale, so absolutely.

To go to your earlier question about the increase in population and increased pressures, more activity in the same carrying capacity of the environment, of the water, of the land, brings those pressures. I guess what I would point to is that it is not more densely developed than many other areas of the globe, so it's really an area of opportunity, and we have to determine how we are going to deal with it. The way I look at it is that it's really a reason, instead of everything being that the sky is falling....

I think it's important to keep our eye on the ball about the protection of the environment, but it brings it more home to people, not so much to this committee but into people's living rooms, if they recognize that management. Part of the stewardship principles and why these stewardship efforts are so successful is that there's a recognition of the importance of the maintenance of that environment. I think all the pressures we're speaking of in terms of that economy are there, but there is every opportunity to manage it well.

In all these cases, most of these things can be managed. They can be cleaned up and they can be managed. Most industries or economies could be run well. As I said, it's a matter of being very clear in the leadership for what you want of that future state, what level of protection you want, and how you want to achieve it. We're getting at this combination of regulatory and incentive-based programs.

Mr. Lawrence Toet: I really do appreciate your optimistic outlook on it. I think we can look to what has been accomplished through the International Joint Commission as an example of some of the things that can be done. As you say, it's a challenge but it's also an opportunity, and I like that approach.

In your presentation you talked about the low-hanging fruit, which is basically what we have with the areas of concern; we have areas of low-hanging fruit. I just wanted to be clear because I don't think you meant this, but I got the sense of kind of an abandonment of those areas of concern and to have a much broader scope. I agree that we have to look at every area, but I would hope you wouldn't be bringing forward the idea that we kind of abandon what we've brought so far through so much great work.

Ms. Bernadette Conant: I appreciate your question and letting me re-articulate that. Perhaps, it was due in part to my not pacing myself well and missing some comments.

The point to be made in my notes was that was low-hanging fruit but it's critical and it's important and one must stay the course in terms of dealing with that. That is first and foremost. But having had some focus on that, it's now, whether it's lifting the veil slightly by that progress or it's simply that the other factors have become more apparent and we're seeing them now, and it may be a mixture, it's just the other more systemic factors are now upon us or becoming more apparent. My point was only that a doubling down on the cleanup of location-specific areas of concern was not an approach that was likely to get us back in this room 10 years later saying that we're doing well now on the systemic pieces.

In no way am I suggesting that we not stay the course and finish those cleanups. That was the priority and it was an appropriate priority. We need to stay the course on that. But now we have to recognize that just staying the course is highly unlikely to help us progress. You have to look to the science to prove this, but we're starting to see some of the signs that were referred to earlier. We saw a lot of progress in the 1970s, 1980s and early 1990s. Now we're starting to see plateauing. We're starting to see the re-emergence of some of the issues we talked about before, which I think overall is a signal that another step needs to be taken.

Thank you for the opportunity to clarify.

● (1700)

Mr. Lawrence Toet: I think we can also say that through that process and by approaching it on that basis we have learned a lot. There's a lot of science that we have learned. I know there's still lots of uncertainty, which we've heard over the testimony of those hearings. But we have learned a lot that we are able to apply now to some of these other areas. So it is important that—

The Chair: Thank you, Mr. Toet. Again, your time is up.

I will move now to Ms. Leslie, for five minutes.

Ms. Megan Leslie: Thank you to all of the witnesses. This has been really good.

Ms. de Leon, I really appreciated the testimony from the Canadian Environmental Law Association, because you had very concrete suggestions, whether it was about changing CEPA about the phosphorus regulations or.... They were really concrete and I appreciated that.

That being said, it's hard for me to ask questions about it because I don't have them all right here in front of me. I think it's one of those cases where I'm going to have to go back through the testimony, look at what your suggestions were and then maybe explore them in another meeting.

Is there anything you wanted to add that you felt wasn't covered when Ms. McClenaghan made those really specific recommendations?

Ms. Fe de Leon: Yes, I think the emphasis was around making sure public participation was key with respect to making decisions around Great Lakes management. Certainly from the perspective of specific regulations, quite a few of them may need to be reviewed, phosphorus being one.

There are other issues with respect to even emerging chemicals that we've just scratched the surface on with respect to how our current federal legislation or approach deals with challenges to the Great Lakes. In my own involvement in those initiatives, particularly around implementing the Great Lakes Water Quality Agreement, there are some question marks. Certainly, flags may need to be raised that the chemicals management plan, which is what we're relying on right now to identify the chemicals of concern in the Great Lakes and to manage those chemicals, may not be adequate for challenges the Great Lakes are facing. I do open up the opportunity with you to do some follow-up on some of those issues, absolutely.

Ms. Megan Leslie: Thanks very much.

There's a lot to chew on there with the recommendations you made and I look forward to doing that.

Madam Conant, I want to continue with the low-hanging fruit theme from earlier.

[*Translation*]

For more complicated and more integrated issues, do we need, for example, studies or action plans? Do we need a political will? Is money the issue?

[*English*]

Where do we go with those complicated, integrated, nuanced issues that will just be tougher? Is it just that we need an action plan? Is it just that we need money? Is it just that politicians need to wake up?

It's probably all those things.

Ms. Bernadette Conant: Yes. My answer is that it would be nice if it were simply one of those things.

This is not the only government around the globe that's struggling with these kinds of complex issues. It takes all of those things.

You've heard eloquent testimony about how difficult and challenging it can be working in a multi-bureaucratic group and trying to find your way through. Nothing that we're talking about here is specific to the Great Lakes in terms of the challenge of the complexity of the issues. For scientists, in terms of dealing with the systems, it's the biology, the chemistry, the transport process. It's equally complicated in terms of who the best people are to do the implementing. By and large it's on-the-ground implementers, either at conservation authorities, stewardship councils, or municipalities.

The answer is that it's a little bit of both. What I have suggested, because it seems too big to get your hands around in just presenting to this committee, is that what is needed, in my view, is leadership to take the instruments and the institutions you have, IJC, COA, and the Great Lakes Water Quality Agreement, and use them to hammer out —it's not an easy process, but it's an important and doable process— what the agreed goals should be and what is stated that we want in the Great Lakes.

One of the points I wanted to make earlier is that it's people's perception, if we're going to protect the environment, that we're going to go back to nature, or we're going to go back to wilderness. We're very much in a working, developed landscape, so it's a matter of making clear decisions about what the end points are. If you have shared end points and shared goals, as you see at the stewardship level, I think that's what you need at the national, or in this case the binational, level.

● (1705)

Ms. Megan Leslie: We're out of time, I think, Mr. Chair.

The Chair: Yes, but we will have one more round here, if you care to take it.

Mr. Storseth.

Mr. Brian Storseth: Thank you very much, Mr. Chair.

As it's so great to see Ms. Leslie here, I'm willing to share with her any of the time I don't use.

The Chair: Will you be as generous as last time?

Voices: Oh, oh!

Mr. Brian Storseth: Thank you very much.

I'd like to get back into a discussion with regard to monitoring, Ms. Conant. One of the things we've heard constantly is the issue of.... Witnesses have come before us and talked about the problems of the change in the temperature of the water but have not had any real codifying examples of what the change in water temperature has been.

From what you're talking about, with some of the best practices and looking forward—I like that, looking forward instead of just talking about, as you said, legacy cleanups—how important will proper monitoring tools be? As well, do you have a view as to what that would look like?

Ms. Bernadette Conant: A vision for a monitoring plan.... Well, monitoring is critical. It's complicated, but it's critical because we can't really say anything about how well we are doing, and to do what I referred to as this term "adaptive management", which really means that you commit to a process, you do it, and then you look at it in a way that you can actually say, "I got what I thought I was going to get, or something different, and I'm going to change my actions because of that." It's a monitoring framework that allows you to do that. It also allows this connection to determine what the farm community needs are, what the goods and services or the ecology needs are. You need a monitoring program that ideally serves both of those needs.

In terms of vision, one of the things that we're doing right now, I mentioned that we have a national research consortium. It is called the Canadian Watershed Research Consortium. We're working with six, hopefully soon to be seven watersheds across Canada. The focus on each of those watersheds is we ask the end users to come around to the desire to have our research funds invested there. So it wasn't to the research community. The first ask was, "If you're a watershed that really wants this, and your collective users and industry investors want us to put our money here, put up your hand."

Each of those six watersheds is working on how to develop what is referred to as a cumulative effects monitoring framework. Basically it's a monitoring framework that makes sense to land use planner questions, to stewardship council questions, and to local or provincial regulatory questions. Basically, what's the canary in the mine shaft, if we're in Tobacco Creek, and it's an agriculturally dominated watershed, or if we work with the Muskoka watershed, where they're looking at a basin where it doesn't actually look like phosphorus is a target, but they're actually looking at calcium levels. So in each case they are customizing what it is that needs to be looked at in their systems, but they're developing a monitoring system that would better inform those land use planning decisions and all the decisions around them.

Going back to Ms. Leslie's question, there really isn't a simple answer to it, other than trying to create structures in which you're clear about the questions you want to ask and trying to get the players around the table who can design it. We are actually looking at a vision of cumulative effects monitoring frameworks that have the same strategic purpose and the same philosophy across Canada, but they're each developed within those local settings. Frankly, the phosphorus-loading actions in the Red River aren't going to affect the Great Lakes basin, and they may be different systems, but they both want to look at whether nutrients are the driver there, what the impacts are that they can see in the ecosystem, so they are all following the same kind of questioning and developing those.

My vision is that more watersheds across Canada join forces to develop a common approach to cumulative effects monitoring, but yes, it's critical because they can't decide what they need to do and they can't decide how well they're doing until they have a monitoring framework they can rely on.

● (1710)

Mr. Brian Storseth: It thus makes it difficult to make proper choices with the land use frameworks without having proper information ahead of time to establish—

Ms. Bernadette Conant: Absolutely. What happens is sometimes you get really good work done by groups looking to achieve some goal: trying to revive the wolf population in an area; trying to save this fisheries; trying to look at endocrine-disrupting chemicals and see if they can be reduced. As I said earlier, if you're just focusing on one of those goals, the implementer should be doing that, but you need a higher framework in which they are participating to make sure that those are interrelated and appropriate for the priorities in your area. Endocrine-disrupting chemicals may not be the priority for your area.

Mr. Brian Storseth: Thank you.

The Chair: You're very consistent, Mr. Storseth.

We'll go now to Ms. Hughes.

[*Translation*]

Mrs. Carol Hughes: Thank you very much, Mr. Chair.

Mr. Florean, did you want to add something?

Did you want do it in French or in English?

[*English*]

Mr. Robert Florean: I'm "franglais" but not—

[*Translation*]

Mrs. Carol Hughes: Mr. Florean, you wanted to add something while answering the question of my colleague, Ms. Leslie.

In your opinion, did Ms. Conant answer the question to your satisfaction or did you want to add something to that?

[*English*]

Mr. Robert Florean: I can't remember now.

[*Translation*]

Mrs. Carol Hughes: It was about the measures that should be taken. Was there a particular measure that should be considered?

It's fine if you don't remember. If it comes back to you, raise your hand and the question will be asked of you again.

[*English*]

Mr. Robert Florean: I'll think about it, because right now I'm—

[*Translation*]

Mrs. Carol Hughes: I had another question about invasive species. These species cause us a great deal of concern.

Why should we act aggressively to control them? As an example, I'm thinking of the Asian carp, common reed grass or microplastics.

[*English*]

Mr. Robert Florean: No translation happened, but the question has to do with invasive species, if I'm not mistaken.

The Chair: You're right. There was no translation.

Mr. Robert Florean: There was no translation, but that's okay.

The bottom line here is what's happening in the Great Lakes today. We have 184 new species that never existed before.

We have some that are of urgent and pressing concern. We've already had our economies, especially the rural economies, devastated by the sea lamprey, and everybody is familiar with that. Asian carp is poised to enter the Great Lakes. I think we're moving a little too slow on that front, not just us but also on the U.S. side, obviously.

Right now we have some phragmites. Are you familiar with that plant? It's taking over entire coastal areas. It's becoming a wall of vegetation. It's also becoming a fire hazard as we're seeing in southern Lake Michigan right now. They have to remove it, otherwise it burns more intensively than forests do. There's a decline of use. You can't even see the water right now. Property values drop, as does tourism. Can you imagine Sauble Beach? Who's familiar with Sauble Beach? It's a massive beach on Lake Huron. All of a sudden there's a massive wall 12 feet or more high that's so dense you can't get through it.

These things are emerging instantly, today. Our council is undertaking this. I didn't even talk about this earlier, but that's one of the aspects we're dealing with. We're working with municipalities to try to tackle it while we still can, but we need support.

[*Translation*]

Mrs. Carol Hughes: Mr. Chair, I'm going to share my time with Ms. Leslie.

[*English*]

The Chair: Sure. We'll be generous and give you lots of time.

Ms. Megan Leslie: Picking up on this idea of what we need, sometimes groups will come and say, “We don't need anymore studies”, or “We don't need to know the science; we know the science”.

Is there anything we can eliminate? What should we not worry about or not focus on? What do we have? Or do we need all of it? If that's the answer, that's the answer.

Ms. Bernadette Conant: I think we need all of it, but the question in front of all of us is whether it's our household budget or our national budget there are only so many things we can do.

The reason I'm pushing for a framework is that the question of whether we have enough investment in the science is best answered in a framework saying where it is we want to go and what the priorities are.

I wouldn't say there's any overall we can drop the science, but what I would say, coming from the science community, is it should be done in parallel. You don't need to stop and say we don't need to do something now until we figure out what the cycling is.

In terms of management of the discharge of contaminants, of persistent contaminants, of nutrients, we know that those things should be done. There are lots of things on the ground that conservation authorities and others, and municipalities, can be doing, but it needs to be done in parallel.

But decisions need to be made, and it should be done in a framework to suggest which of this information is most likely to move us ahead. I think it's just a management approach.

● (1715)

The Chair: Mr. Florean, did you want to add to that?

Mr. Robert Florean: I want to make a point.

In our funding of NSERC grants, too often studies that have been undertaken by graduate students working on their theses have focused on things that really haven't achieved tangible results for what we need today.

Too often in my 36-year career as a civil servant, I've seen studies done that collected dust on the shelves, not because...they were done in a practical, applicable manner; they were done just because somebody had a particular interest.

This government needs to really look and the community really needs to look at where this funding is. We have so many issues right now just in the Great Lakes alone, forget about everything else in the country, that we need to focus those resources directly to achieve the results that we need today.

The Chair: Thank you very much.

I want to thank all of our witnesses for being here today, including our witness who is here by video conference. Thank you for joining us today.

With that we're going to recess for two minutes while we reconvene for an in camera session.

[*Proceedings continue in camera*]