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Chair

Mr. Harold Albrecht

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● (1530)

[*English*]

The Chair (Mr. Harold Albrecht (Kitchener—Conestoga, CPC)): I'd like to call to order meeting number 12 of the Standing Committee on Environment and Sustainable Development.

I will remind committee members of the mandate of the study we're embarking on:

> That the committee undertake a ten (10) meeting study on the Water quality of the Great Lakes Basin. This study will focus on three (3) areas: (a) identifying locations within the Great Lakes Basin that are of environmental concern and the prioritization of these areas to be addressed; (b) reviewing the efforts that are planned and/or currently underway to remediate the identifiable areas of environmental concern; and (c) recommending best practices that will facilitate the further remediation of areas of environmental concern within the Great Lakes Basin.

Some of us at this table are old enough to remember some of the concerns of the 1960s within the Great Lakes and have seen some significant improvement since that time, and we're happy about that, but we all know as well that we can continue to move forward on helping to increase that water quality to a greater degree.

We're happy to have with us witnesses from the Department of the Environment: Chris Forbes, assistant deputy minister; Michael Goffin, regional director general; and Patricia Chamber, section head of watershed stressors and nutrients, science and technology branch.

I understand, Mr. Forbes, you have an opening statement, so we welcome you to proceed with that at this point.

Mr. Chris Forbes (Assistant Deputy Minister, Strategic Policy Branch and Regional Directors General Offices, Department of the Environment): Thank you, Chair.

Thank you, committee members, for inviting us here today.

We are pleased to be here to kick off your study on the Great Lakes water quality, and in particular, to talk about specific locations of environmental concern.

As you mentioned, l am joined by my colleague, Michael Goffin, who is the regional director general of our Ontario office, and Dr. Patricia Chambers, who is from our water science and technology directorate.

[*Translation*]

As is evidenced in the Great Lakes and across the entire country, there is a clear recognition of the critical importance of a safe and secure water supply to human health, the environment and the economy.

The Government of Canada is working across the country, and in the Great Lakes region, with the United States, provinces, and community stakeholders to ensure that Canadians have access to clean, safe and secure water.

[*English*]

To guide Canada and the United States in addressing challenges to water quality, the Great Lakes Water Quality Agreement was signed in 1972 and was most recently amended in 2012. The agreement lays out clear obligations by both governments to restore and protect the Great Lakes. It also establishes Canada-U.S. mechanisms for cooperation, which is essential to our success.

[*Translation*]

Environment Canada leads Canada's efforts under the agreement, coordinating efforts with other federal departments, the Province of Ontario, municipalities, business, first nations, non-government organizations and the public.

I would like to focus my remarks today on two important agreement commitments that address geographic areas of environmental concern: the remediation of areas of concern and the effort to address toxic and nuisance algae.

[*English*]

Starting on the first point, the 2012 agreement reaffirms Canada's commitment to restore water quality and ecosystem health in designated areas of concern. These are specific locations, such as harbours and embayments, where water quality and ecosystem health have been severely degraded by human activity at the local level.

Of the 43 areas of concern designated by Canada and the United States, 17 are in Canada. Three of these areas have been fully remediated, and water quality and ecosystem health have been restored, leading to delisting. In a further two areas of concern, all remedial actions have been completed, but additional time is required for the environment to recover. Once restoration of environmental quality is confirmed, these sites will also be delisted.

Over the next five years we project completion of all remedial actions in a further five Canadian areas of concern. Work will continue on the remaining seven Canadian areas of concern.

[*Translation*]

The remediation process has involved significant scientific investment by Environment Canada and our partners, to define and characterize the nature, extent and causes of the environmental degradation, and to identify and recommend options for remediation.

In each Canadian area of concern, the local community has been engaged in the development of a comprehensive remedial action plan to document remedial measures required and identify the parties responsible for implementation.

To stimulate action, Environment Canada provides funding to local community-led environmental remediation projects. Since 1989, approximately $100 million has been provided by Environment Canada, leveraging over $350 million from other sources and supporting more than 900 partnered projects.

● (1535)

[*English*]

One of our main projects that we are currently leading right now is the remediation of Canada's largest contaminated sediment site in the Great Lakes, at Randle Reef in Hamilton harbour. The federal contribution to this project is $46.3 million, with similar amounts contributed by the Province of Ontario, and also by the local community.

Despite significant progress, continued effort is required to complete the remediation of Canadian areas of concern. In some instances, such as the remediation of remaining contaminated sediment sites in Thunder Bay, St. Marys River, and St. Clair River, new approaches and financial partnerships will be required.

No new Canadian areas of concern have been identified since sites were designated in 1987. It's recognized, however, that many nearshore areas are under stress from a range of factors, such as population growth and development, harmful pollutants, and invasive species.

Accordingly, Canada and the United States have committed to develop by 2016 a binational nearshore framework that will provide an overall assessment of nearshore waters, and establish priorities for nearshore restoration and protection.

The second key 2012 Great Lakes Water Quality Agreement commitment, which focuses on geographic areas of environmental concern, is the commitment to address toxic and nuisance algae.

[*Translation*]

Algae blooms in the Great Lakes were successfully faced in the past. In the 1960s and 1970s, algae development resulted in fish kills, the degradation of beaches and the clogging of water intake pipes. Phosphorus reductions were achieved through improvements to municipal wastewater treatment, limitations on phosphorus in detergents, and adoption of conservation tillage practices by farmers.

[*English*]

This problem has returned 40 years later and new science now shows certain species of algae are harmful to fish, wildlife, and humans.

While Lake Erie is the most affected, the shorelines of Lake Ontario and southeastern Georgian Bay and Lake Huron also experience adverse impacts. Potential impacts include threats to drinking water safety, increasing water treatment costs, degraded fish and wildlife habitat, and adverse impacts on tourism and commercial and recreational fisheries.

Reasons for the resurgence of the algae are complex and not completely understood. Phosphorus levels have declined significantly and are currently stable; however, the proportion of phosphorus in dissolved form is increasing, and this is believed to be contributing to increased algae growth. Climate change and the presence of aquatic invasive species may also play a role.

The 2012 agreement commits Canada and the United States to establish revised binational phosphorus reduction targets and management plans for the Great Lakes. Owing to the magnitude of the problem in Lake Erie, the agreement specifies completion dates of 2016 for the establishment of phosphorus reduction targets, and 2018 for establishment of phosphorus reduction plans.

[*Translation*]

Environment Canada is leading the Government of Canada response. Through the Great Lakes nutrient initiative, $16 million is being directed to research and monitoring to better understand the causes of toxic and nuisance algae growth, and to provide data and information necessary to establish new phosphorus reduction targets.

At the same time, Environment Canada is taking action to reduce phosphorus discharges. The Lake Simcoe and Southeastern Georgian Bay cleanup fund has allocated $32 million and leveraged $51 million to support nearly 200 phosphorus reduction projects. We are also working with conservation authorities in key watersheds to demonstrate best practices in watershed planning and management.

[*English*]

Depending on the scale of phosphorus reductions required to achieve a healthy ecosystem, new approaches and techniques may be needed. However, we've demonstrated in the past that this problem can be successfully addressed through a combination of national, regional, and local strategies.

In summary, Great Lakes water quality remains a priority for Environment Canada. The 2012 Great Lakes Water Quality Agreement lays out specific commitments for restoration and protection. We are investing in both science and actions on the ground necessary to implement this new agreement. Partnerships, both binational and domestic, are a very important component of this success.

We are making progress on remediation of the designated areas of concern and are starting to focus on understanding and addressing the problem of toxic and nuisance algae in the Great Lakes.

Finally, I'd also like to note that Canada and Ontario are nearing the conclusion of negotiations for a new Canada-Ontario agreement respecting Great Lakes water quality and ecosystem health. This agreement was first signed in 1971 and has been renewed six times. It's a very important mechanism for coordinating federal and provincial actions to restore and protect the Great Lakes.

The most recent agreement, for example, was signed in 2007 and engaged three Ontario ministries and eight federal departments, and resulted in 176 specific commitments being successfully implemented over a five-year period.

That ends my opening remarks. My colleagues and I would be happy to take any questions.

● (1540)

The Chair: Thank you very much, Mr. Forbes.

We're going to move to the opening rounds of seven minutes each.

We'll start with Mr. Woodworth.

Mr. Stephen Woodworth (Kitchener Centre, CPC): Thanks to the witnesses for attending today.

My riding is Kitchener Centre, which is in the heart of southern Ontario. Consequently, I have a great interest in this area.

It's hard for me to know where to start, because I have so many questions, but I think I'd like to begin with the issue of phosphorus reductions in Lake Erie and ask you to go over that a little more closely.

You mentioned, for example, that dissolved form phosphorus is increasing. I don't know what that is. I have a general idea that phosphorus can be a discharge from farming activities and that we're trying to address that along the Grand River.

Perhaps you could expand on that a little bit and tell me what is involved in the target setting that will take another two years to accomplish. I don't really understand who you are consulting with or how you are going to achieve those targets.

Mr. Chris Forbes: Maybe I'll start with the second part of the question, and then I'll turn to Patricia to talk about dissolved phosphorus.

Right now, through the Great Lakes nutrient initiative, we're doing a fair bit of research in the Great Lakes into the causes of the problem we're seeing with algae. We're trying to get a better understanding of the causes and the factors that are influencing the increase we're seeing in algae.

Certainly we need to work with partners, such as the Province of Ontario, the U.S. obviously as a partner that has to take on a target going forward, and local communities, to understand what is driving this increase, and what kinds of targets are necessary and how we might achieve them.

There are a number of parties involved. We want to get the science right before we start setting targets, and that's part of what's going on now, certainly as well as working with partners to make sure we have a common understanding of goals and objectives.

I'll turn to Patricia to talk about the dissolved phosphorus.

Dr. Patricia Chambers (Section Head, Watershed Stressors and Nutrients, Science and Technology Branch, Department of the Environment): Maybe I'll start by being a little bit technical, but then I'll bring it to a higher level.

Basically, as scientists, we look at dissolved and particulate phosphorus. These are technical terms; it depends on what passes through one of our laboratory filters, a very fine filter, a very fine mesh.

If it passes through this fine mesh, it's called “dissolved”. That means very small molecules. Because they're small, the algae can take them up, and that fuels their growth.

The other forms of phosphorus are the particulate ones, which don't pass through this very fine filter. They tend to be particles that are sediment associated. They're ones that are associated with soils or particles like that. This type of phosphorus isn't immediately available to fuel the growth of the algae. If you think of the fertilizers you use on your plants or your lawn, you're using pellets, usually, that have the soluble phosphorus bound onto them and can come off quickly and feed the grass and the plants.

Mr. Stephen Woodworth: What's the source of the dissolved form phosphorus, and why does it seem to be increasing or recurring as a problem in Lake Erie?

Dr. Patricia Chambers: There are still a number of questions about that one.

Part of it seems to be changing farm practices. Initially we used farm practices where there was a lot of tillage on the land, and that tillage resulted in the soil particles being loosened. When we had a heavy snowfall and that melted or we had a rain event, these heavy particles were carried into the streams, the soil particles with the phosphorus fairly tightly bound onto them.

In some cases, because we've changed our farming practices to what's now referred to as “no till”, we have more liquid forms of phosphorus, these dissolved ones seeping.... That's not to say that's the only source of dissolved phosphorus, because a lot of what comes in from pipes, be they industrial or sewage, is also in dissolved form.

● (1545)

Mr. Stephen Woodworth: I heard an interesting interview a day or two ago with an official from the New York environment department, or one of them, about an issue of little plastic pellets, or something of that nature, in the Lake Ontario and Lake Erie area.

Could you tell me what was being talked about and what the impact is, please? Does it have to do with the algae?

Mr. Michael Goffin (Regional Director General, Ontario Region, Department of the Environment): No, it's a separate issue. It's microplastics. It's been an area of study in the oceans, where they're finding zones of concentrations of plastic. One of the sources is our plastic bags and all the plastics we use that get ground up and persist in the environment.

Interestingly, with microplastics, some are used in health and beauty products, so those nice skin scrubs that we all use contain actual plastics. Some companies are taking voluntary measures to stop using those now.

Mr. Stephen Woodworth: Aside from stopping them at the source, is there any other thinking about how to deal with that?

Mr. Michael Goffin: That's the big challenge, how you would do that, either in sewage treatment or in other measures. Right now, I think the area of research is the impact of those microplastics and how important they are in the Great Lakes, but I think that already companies are starting to take proactive action.

Mr. Stephen Woodworth: I have one last question. Were there any non-governmental agencies involved in the cleanup of Randle Reef with Environment Canada?

Mr. Chris Forbes: Our partners would be the cities of Burlington and Hamilton, the Province of Ontario, and the Hamilton Port Authority, and I guess U.S. Steel is there, helping in kind.

Mr. Michael Goffin: If I could add to that, though, Hamilton may be a best practice in terms of community involvement. They have a group called the Bay Area Restoration Council that has been absolutely wonderful in bringing people down to the harbour and creating recreational facilities for them along the harbour, so that people are there and are questioning why they can't use the water more. That's been a major driver of action to clean up the harbour. There is very active local community support.

Mr. Stephen Woodworth: Thank you.

The Chair: Thank you, Mr. Woodworth.

We're going to move now to Mr. Choquette, for seven minutes, please.

[*Translation*]

Mr. François Choquette (Drummond, NDP): Thank you, Mr. Chair.

I want to thank the witnesses for being here today.

Mr. Forbes, thank you for your presentation. I was happy to hear you mention climate change. In order to deal with water pollution in the Great Lakes, it's necessary to examine the whole issue of climate change. And that is true despite the fact that the budget released on February 11 made no mention of it.

[*English*]

The Chair: Excuse me, Mr. Choquette. I want to remind you that I specifically read out the parameters of our study when we opened this meeting, and I would encourage you to keep to this topic that this committee agreed to study.

We're not studying climate change. We're studying Great Lakes water pollution.

[*Translation*]

Mr. François Choquette: Is that a point of order, Mr. Chair? I thought it was up to the members of the committee to do that, not the chair. No big deal. I will carry on.

[*English*]

Mr. Stephen Woodworth: Point of order, Mr. Chair.

The Chair: I am quite sure that the chair is able to draw attention to the parameters the committee agreed to, but I'll go to Mr. Woodworth.

Mr. Stephen Woodworth: I may have missed it. I thought I was listening very intently, but to be honest with you, I don't think I heard the witness speak about climate change. If I missed it, I apologize.

I think that what we're really here to talk about is water quality. That's what the witness spent most of his time talking about, and that's what I'd ask us to keep on.

The Chair: Mr. Choquette.

Mr. Bevington, do you have a point of order?

Mr. Dennis Bevington (Western Arctic, NDP): On the same point of order, if you're talking about algae bloom, I don't know if you can avoid talking about changing water temperature or levels of water in different places in the Great Lakes. These things are all related, Mr. Chair.

The Chair: All right. Some of them are related.

Move ahead, Mr. Choquette.

[*Translation*]

Mr. François Choquette: Thank you, Mr. Chair.

What I was saying was that Mr. Forbes mentioned climate change, but our study does not address that issue, as the chair so clearly pointed out. If our intention is to undertake a serious study of the Great Lakes, it has to cover the right parameters. And for that reason, I would like to move the following motion:

> That the Committee commence a study on the Great Lakes, to consider the impact of climate change on water levels, temperature and ecology.

I will explain the reasons for my motion.

● (1550)

[*English*]

Mr. Colin Carrie (Oshawa, CPC): Point of order.

A voice: We have a motion.

[*Translation*]

Mr. François Choquette: May I finish explaining my motion first?

[*English*]

The Chair: Finish your motion.

[*Translation*]

Mr. François Choquette: Thank you, Mr. Chair.

Actually, I was going to speak to the reasons I proposed the motion.

[*English*]

The Chair: No, Mr. Choquette. Have you made a motion?

[*Translation*]

Mr. François Choquette: Yes, I proposed a motion.

[*English*]

The Chair: Okay. We're going to deal with the motion. The motion is on the floor.

Could we read the motion? It's motion number three in the list that Mr. Choquette presented earlier.

Is there debate on the motion?

Mr. Carrie.

Mr. Colin Carrie: Because we're doing committee business, I move that we go in camera for this motion.

The Chair: On the motion to have the committee move in camera to consider—

Ms. Mylène Freeman (Argenteuil—Papineau—Mirabel, NDP): Could we record the vote, please.

The Chair: The clerk will record the vote.

(Motion agreed to: yeas 5; nays 4)

[*Proceedings continue in camera*]

● (1550)

(Pause)

● (1555)

[*Public proceedings resume*]

The Chair: We welcome our witnesses back.

We'll proceed from where we were. We have five minutes left in Mr. Choquette's round of questions.

Mr. Choquette.

[*Translation*]

Mr. François Choquette: Thank you, Mr. Chair.

I am going to give Mr. Bevington the rest of my time.

[*English*]

Mr. Dennis Bevington: Thank you, Mr. Chair, and to the witnesses, thanks.

My expertise in water lies more on the Slave River and the lakes of northern Canada, so I'm curious about a number of things.

How much impact does air pollution play in the system these days?

Mr. Chris Forbes: I'll turn that to Mike or Patricia in terms of air pollution.

Mr. Michael Goffin: The long-range transport of atmospheric pollutants is still an issue globally.

For Lake Superior in the north where there aren't a lot of local sources, it still accounts for a significant contribution of some chemicals. Overall the good news is that in the last 30 years the concentrations of most of the persistent toxic chemicals in the Great Lakes have been reduced by 80% to 90%, so we're seeing large decreases in chemicals in the Great Lakes.

Mr. Dennis Bevington: What indicator species do you use? Do you use indicator species for those types of concentrations?

Mr. Michael Goffin: We use direct water quality monitoring. We have a fish contaminant program in the Great Lakes where we collect fish in both Canada and the United States from all lakes and analyze accumulation in fish. We have herring gull monitoring, which is now being used out west to monitor some of the developments out west.

Patricia might know of some others.

Dr. Patricia Chambers: I was simply going to say that we have two what we call master stations for atmospheric deposition monitoring, and maybe eight or ten others around the edge of the lake and in the watershed. Those are paralleled by similar stations on the U.S. side so that we have good estimates of atmospheric deposition.

Mr. Michael Goffin: You asked about indicator species. The one indicator species that we do watch is the bald eagle. Bald eagles were not present in the Great Lakes basin for a number of years, largely because of the contaminants in the lakes. They've returned to most of the lake basins now.

Mr. Dennis Bevington: You're not using things like fish livers or —

Mr. Michael Goffin: We certainly look at fish. We look at whole fish, fish parts, and edible portions of fish.

Mr. Dennis Bevington: Are there any patterns in there that you'd care to—

Mr. Michael Goffin: They're all declining significantly in terms of the persistent toxins.

Mr. Dennis Bevington: So that's not the area we should be looking at.

What's the water temperature doing, and what's the historic...?

Mr. Michael Goffin: Water temperature is increasing. There is a link to algae growth. We're seeing a longer growing season for algae in Lake Erie.

The lakes are all different. Lake Superior is a very large and deep lake, so it's a colder lake and it's not as responsive. Lake Erie is the shallowest of the lakes and that's why we're seeing more rapid changes, and more development of algae.

Certainly, water temperature is one of the factors.

Mr. Dennis Bevington: I've heard reports that in Georgian Bay there is a great decline in the water levels. Is that correct?

Dr. Patricia Chambers: That's correct. They're experiencing near record lows in Georgian Bay.

Mr. Dennis Bevington: What does that do to the aquatic systems in that region?

Dr. Patricia Chambers: What we've seen is that with the water levels going down, the temperatures in the summer and the slight increase in temperatures is driving those warmer waters down deeper into the water column, so to speak. That collapses that narrow cold band on the bottom and makes it more shallow. In those sorts of cases in those particular years when it's very warm and that bottom layer collapses, we see lower and lower oxygen levels in the bottom of the water. The lower level of oxygen and how that's affected by temperature are certainly a concern to us.

● (1600)

Mr. Dennis Bevington: That's like the biological oxygen demand, isn't it?

Dr. Patricia Chambers: It's related to that, yes. That's consuming some of the oxygen.

Mr. Dennis Bevington: Okay, and that of course affects the fish life and everything.

Dr. Patricia Chambers: Yes, changes to the oxygen or the extent of the oxygenated zone can affect the fish.

Mr. Dennis Bevington: Would that affect the breeding areas as well?

Dr. Patricia Chambers: It can. I really can't speak to the details of that, but it affects the zonation of the lake.

Mr. Dennis Bevington: Do you do sediment analysis or water column analysis of sediment for any reason?

Dr. Patricia Chambers: We collect sediments routinely for both analysis of contaminants as well as nutrients to look at the oxygen demand of the sediment. One of the concerns is that we've had nutrients coming into these lakes...well, they come in naturally so they've been coming in since geologic times, but that addition of nutrients has been exacerbated in recent years. Those nutrients ultimately will settle into the bottom of the lake and as bacteria and other...work over those sediments, they'll consume oxygen. We are concerned about how the lakes differ and how the sediments in the lakes are affected by human activity.

The Chair: Thank you.

Mr. Bevington, you're over time.

We'll go now to Mr. Toet.

Mr. Lawrence Toet (Elmwood—Transcona, CPC): Thank you to the witnesses for appearing before us today.

I want to ask you about your areas of concern, the 17 in Canada you talked about. There are three fully remediated ones, two areas where basically the actions have been completed and it's now just time for recovery of the environment, and a further five in which completion will happen in the next five years. Where are we with the remaining seven, and what is the status of those?

Mr. Chris Forbes: I'll start and Mike, who knows more about these things, can add.

Of the remaining seven, the biggest one is the Randle Reef, and we've talked about that. That's one that we think will stretch beyond the timeline we're talking about there. That's going to take us a bit of time.

There are a few that I mentioned in my remarks, which we're still looking at, finding partners and finding what approach we need to follow in terms of remediation, the best way to move forward.

As it stands right now, we think, from where we are with the resources we're putting into this, that we would have the work done on all of the areas of concern by 2025, if I'm correct.

I don't know if you want to add to that, Mike.

Mr. Michael Goffin: I'd just like to say that 2025 is our goal for those other seven. It's a bit hard to project that far out.

Randle Reef is a sediment problem, and we have a solution and we're beginning to implement.

Port Hope harbour is another place where there is a sediment problem, contamination due to radioactive materials, and that will be remediated as part of the major initiative by Natural Resources Canada in the Port Hope area.

There are three other sites, Thunder Bay, St. Marys River, and St. Clair River, where there are very challenging contaminated sediment problems. We have sediments contaminated by historic discharges, sometimes discharges over more than 100 years, so we're still looking for solutions in those three areas.

That's why they're a little bit longer term, but we're projecting that by 2025 we should be finished in those areas.

Mr. Lawrence Toet: Are you able to use some of the knowledge at this point in time, and specifically some of the knowledge you've built through the work on Randle Reef, in some of these other sediment areas? Are you able to translate that knowledge to help speed up those processes?

Mr. Michael Goffin: For sure, and we're actually using that knowledge in other parts of Canada, North America, and around the world. We developed the way we assess sediments in the Great Lakes, and we use that nationally now to characterize sediments and figure out how much of the sediment we need to remediate.

At Thunder Bay, we're looking at the possibility of using the same type of approach we're using in Randle Reef. It's a bit challenging and we're not sure that will work, but we're constantly applying the lessons learned to the other areas of concern, both within Canada and within the United States. We work very closely with the U.S. on their remediations.

Mr. Lawrence Toet: You did mention that there's an 80% to 90% reduction of chemicals in the Great Lakes. It sounds as though most of what you're left to deal with on these cleanups are historic issues and there are no new issues arising that you're aware of or that you're seeing in these areas that are exacerbating this issue at all.

Mr. Michael Goffin: Certainly in the contaminated sediment field that's correct. These are legacy problems.

What's changed in the Great Lakes since we started working in the 1970s is that we now have national legislation and provincial legislation that controls the discharge of chemicals. Federally we have the chemical management plan and the Canadian Environmental Protection Act. We're constantly assessing new chemicals and trying to prevent the release of harmful chemicals into the environment.

Really, our contribution to that at an ecosystem level is to address those legacy problems.

● (1605)

Mr. Lawrence Toet: When you have this end date of 2025, and when you're looking at that in the context of the reduction in chemicals that are already there, you are basically dealing with sediment issues. It's not a moving issue, so to speak, at this point in time.

Are you very confident that by 2025, with a few of the projects perhaps going slightly beyond that, you'll have done pretty much all of the remediation that will need to be done in the lakes and that we will have a good, safe environment in the lakes?

Mr. Chris Forbes: Just to comment, that's our objective, 2025, and obviously as I think Mike has mentioned, we have to make sure we take the learning we have from current projects and apply that where we can.

The 2025 target is for the areas of concern that were identified under the Great Lakes Water Quality Agreement. Certainly from that standpoint we would hope that by 2025 we're at or close to the finish line on those.

That doesn't mean we won't see other challenges emerge. Indeed one of the jobs we have at Environment Canada is to make sure we're monitoring and looking into other challenges. For example, the algae challenge is one which we talked about already, so we're certainly mindful that there may be other issues we have to keep a watch on.

Mike mentioned, under the chemical management plan, watching for whatever else, what new information or new science we have about what might be harmful, and making sure we keep an eye on that.

Mr. Lawrence Toet: As far as the phosphorus aspect of it goes, I'm a little more familiar, being from Manitoba, with the Lake Winnipeg basin area and some of the work that's being done there. I would assume there's some sharing of knowledge back and forth on this.

You talked about the nearshore rehabilitation work, but I know in Lake Winnipeg they're really starting to extend that look in the basin further out, looking at a lot of the wetland rehabilitation as a solution here.

How far are you moving into the actual basin to look for solutions on the phosphorus loading?

Mr. Michael Goffin: We actually work throughout the entire Great Lakes basin. The sources of the phosphorus are largely from land sources. They're urban, such as waste water treatment plants, stormwater, even household fertilizers that people use, but they're also agricultural. We work throughout the basins, often through conservation authorities in Ontario.

As well as the sources coming from within the basins, some of the solutions, as you mentioned, come from within the basins. You can attenuate the phosphorus; you can stop it before it reaches the lake, by building wetlands, by naturalizing streams, or by taking other measures.

Mr. Lawrence Toet: Are those measures that are being looked at, or that are being implemented at this time?

Mr. Michael Goffin: Yes, they are. We do have our Lake Simcoe and Georgian Bay cleanup fund, which is actually federal funding that was renewed in budget 2012. It's $30 million over five years. That helps stimulate action on the ground to demonstrate projects to reduce phosphorus from entering Lake Simcoe and Georgian Bay.

The Chair: Thank you, Mr. Goffin and Mr. Toet.

We'll move now to Mr. McKay for seven minutes.

Hon. John McKay (Scarborough—Guildwood, Lib.): I just want to endorse the comment that Mr. Forbes made about the friends of various basins, rivers, watersheds, and things of that nature. They are an integral and very important part of stimulating public awareness.

I want to move to Mr. Goffin's comments about legacy chemicals and talk not so much about the legacy chemicals as about the chemicals that are associated with fracking. The environment commissioner said there will be a review of these reporting requirements that will be completed in March.

Could you give the committee an update on where the department is on that?

Mr. Chris Forbes: That's something I'll have to get back to you on. That's not something I'm aware of. That may be outside of our area. It may be a Natural Resources Canada issue, or....

I'll have to check into that for you.

Hon. John McKay: Okay. I'm just quoting directly from the environment commissioner.

Mr. Chris Forbes: Right. I wasn't disagreeing with you. It's more that—

● (1610)

Hon. John McKay: I'll just leave it there, that you'll get back to us.

Mr. Chris Forbes: Yes.

Hon. John McKay: The second issue is with regard to your last comment, Mr. Forbes, about the Great Lakes agreement. That would involve first nations, municipalities, the province, and the federal government.

I'm given to understand that the province, the municipalities, and the first nations have all signed off, all 133 first nations. Is that right?

Mr. Chris Forbes: The agreement is between the Government of Canada and the Government of Ontario, with some undertakings and some annexes related to various other groups that may be implicated. Certainly our engagement with stakeholders and with first nations groups I think is covered.

The negotiations happen between the two governments. As I think I said in my remarks, we think we're close to finalizing that. The process, obviously, once that gets done—there are a number of implicated federal departments and a number of implicated provincial ministries—would be to seek approvals and post for—

Hon. John McKay: What does “close” mean?

Mr. Chris Forbes: Well, we'd hope in the coming months. I don't control the process myself, but we'd ideally, I think, be done in the coming months and have something that we would post for public comment.

Hon. John McKay: So 2014 is reasonable.

Mr. Chris Forbes: Oh, yes, for sure, I guess just on the approval of first nations and others. I mean, over the course of the negotiations, and Mike can certainly provide some colour commentary, we do engage, obviously, as we go through the preparation, with implicated stakeholders, including first nations, municipalities, and others.

Whether they may have the precise wording or not, they're certainly aware of a lot of the issues, and their views have been, I think, extensively communicated to us.

Hon. John McKay: They don't have any sign-off rights as such.

Mr. Chris Forbes: No. It's an agreement between the two governments.

Hon. John McKay: Okay.

In a report, now a bit old actually, by the International Joint Commission, they talked about a conflict, in their final recommendation, between the Great Lakes Joint Marine Pollution Contingency Plan and the Great Lakes Quality Agreement. One agreement says that wherever the pollution originates, that's the country responsible for it. The other agreement says that it's joint, regardless of the origin of the pollution.

Can you tell me whether that conflict has been resolved?

Mr. Michael Goffin: Yes.

I would suspect that the report predates the amendment to the Great Lakes Water Quality Agreement, a Canada-U.S agreement that occurred in 2012. The newly amended Great Lakes Water Quality Agreement simply references the marine contingency agreement and addresses notification.

The response is as outlined in the marine contingency—

Hon. John McKay: Who is responsible for it?

Mr. Michael Goffin: That means that the first response is the originating country where the spill happens, and there are notification requirements.

Hon. John McKay: If something happens in Canada, and of course water flows, who is the responsible entity? Is it Canada?

Mr. Michael Goffin: For the initial response, and then the contingency plan provides the framework for cooperation. It's a joint response on—

Hon. John McKay: Who ends up with the liabilities from that flow?

Mr. Michael Goffin: I would have to check further into the marine contingency plan.

Hon. John McKay: The government put forward a concept of polluter pay in the Speech from the Throne. As far I recollect, there hasn't been much happening since then.

Would the concept of polluter pay be applied to this kind of agreement between Canada and the U.S.?

Mr. Michael Goffin: Polluter pay is one of the principles in the Great Lakes Water Quality Agreement, so we always look first to apply the polluter pay principle.

Hon. John McKay: Somebody was telling me that not only are there shipments going through the Great Lakes with oil sands products, but there are also on docks and on shore various oil sands products, which frankly caught me by a bit of surprise.

Is that true?

Mr. Michael Goffin: Not to my knowledge. I know it has been discussed, but not to my knowledge.

Hon. John McKay: As far as Environment Canada is concerned, there are no oil sands products, whether it's diluted bitumen or full bore bitumen being shipped through the Great Lakes system.

● (1615)

Mr. Chris Forbes: Yes.

Although, to be clear, I think you'd have to talk to the Department of Transport or others about specific shipments.

As Mike said, that's to our knowledge, but I'm not sure. That's not part of our—

Hon. John McKay: It frankly came as a bit of a surprise to me as well, and it would be of some concern.

A final issue is with respect to these algae blooms and the diminished volumes in the Great Lakes, particularly Georgian Bay, and I suppose Lake Huron, Lake St. Clair, and Lake Erie. If you look at your map, you can see that.

It's not clear to me how this is going to get—

The Chair: Mr. McKay, your time is up, so could you quickly get to your question.

Hon. John McKay: It's not clear to me how this is going to be resolved without a substantial increase in the volume of water.

Mr. Michael Goffin: The volume level of water is one factor; I wouldn't say it's a major factor. Phosphorus is the controlling substance of all the things that affect algae growth. We think the way to influence the amount of algae in the lakes is to influence the amount of phosphorus entering the lakes. That's the current science.

Changes in water levels, in Georgian Bay in particular, might affect circulation patterns and could have an impact on algae growth, but we're still looking at that.

The Chair: Thank you, Mr. Goffin, and Mr. McKay.

We have three minutes left for the last questioner.

Mr. Choquette.

[*Translation*]

Mr. François Choquette: Thank you, Mr. Chair. I am going to be quick given how little time I have.

Of course, the Canada-Ontario agreement expired in June 2012, I believe. That's a while ago now.

Are you involved in the talks regarding the new agreement? Can we expect to see a new agreement soon? All those concerned about water quality in the Great Lakes say how urgently a Canada-Ontario agreement is needed.

Mr. Chris Forbes: The answer is yes. We hope it will be ready for public discussion within two or three months, or somewhere in that neighbourhood. That is our goal. Our negotiations with the province are almost done.

Mr. François Choquette: Thank you.

As you know, in the last omnibus budget bill, the government made cuts. Funding for the Experimental Lakes was cut and responsibility for the area was transferred. It's all rather complex.

I'm sure the answer is yes, but have you ever worked on scientific applications? Science is key when you're looking for ways to clean up the Great Lakes and improve water quality.

Will you still have a hand in the Experimental Lakes? How is all that going to work? Could you give me an overview of that?

Mr. Chris Forbes: I cannot really comment on the Experimental Lakes issue. I can, however, ask Patricia to speak to that in a moment.

It is important to note that we have actually increased science-related spending in the Great Lakes since 2010. A key component of the Great Lakes nutrient initiative centres around science.

I will now turn the floor over to Patricia on the issue of the Experimental Lakes.

[*English*]

Dr. Patricia Chambers: On the Experimental Lakes, we have had some scientific involvement over the years, but it has been led through Fisheries and Oceans. A lot of the scientific effort has come through that department.

A lot of our scientific effort on nutrients in the last 10 years, or probably 20 years, has focused on the Great Lakes, and more recently on Lake Simcoe and Lake Winnipeg.

The Chair: Thank you very much.

I want to thank our witnesses for being here today. Thank you for your responses to the questions from our committee members.

We're going to suspend for two minutes while we allow our witnesses to leave and our new witnesses to take their seats at the table.

Thank you. We will suspend.

● (1615)

(Pause)

● (1620)

The Chair: I'd like to call the meeting back to order, please.

We're on a very tight timeline. We have a large number of witnesses, and we want to give them as much time as we possibly can.

We welcome from the Department of Agriculture and Agri-Food, Ian Campbell, director. From Infrastructure Canada, we have Jeff Moore and Stephanie Tanton. From the Department of Fisheries and Oceans, we have Trevor Swerdfager, David Burden, and Patrice Simon. Welcome.

We're going to start with Dr. Campbell, director of the science coordination division, Department of Agriculture and Agri-Food.

Dr. Ian Campbell (Director, Science Coordination Division, Science and Technology Branch, Department of Agriculture and Agri-Food): My name is Ian Campbell. I'm the director of the science coordination division in the science and technology branch at Agriculture and Agri-Food Canada.

I'm very pleased to have the opportunity to talk about Agriculture and Agri-Food Canada's scientific involvement on Great Lakes water quality. Within the context of the committee's study, my comments are confined pretty much to the third area of focus, which is best practices.

The science and technology branch at AAFC conducts research, development, and knowledge transfer, with the goal of developing technologies and farming practices that improve the economic prosperity and sustainability of the sector. To do that, we use an approach based on partnerships, working with industry, universities and colleges, and other science providers to provide science that enhances the sector's resiliency, fosters new areas of opportunity, and supports sector competitiveness.

The Great Lakes cover a large drainage area with a wide range of land uses, including forestry, agriculture, industrial development, and urban areas. The Great Lakes basin includes highly diverse agriculture and agrifood operations.

While jurisdiction for land use decisions or for protecting surface waters, including the Great Lakes, lies with the provinces and to some extent with Environment Canada, the agriculture sector recognizes a need to minimize nutrient losses from its operations and a responsibility towards environmental stewardship. This is evident in efforts by industry, supported by governments, to develop and implement practices to apply the right fertilizer source at the right rate, at the right time, and in the right place.

AAFC has invested over the years in researching, developing, and disseminating information about beneficial management practices, or BMPs, that reduce the loss of nutrients and other forms of environmental impact from farming operations. With respect to Great Lakes water quality, a key issue for agriculture is nutrient management.

From a farmer's perspective, plant nutrients such as commercial fertilizers are an input cost, and they therefore have an incentive to ensure that nutrients are delivered efficiently to the crop and not lost to the surrounding environment. However, agricultural production is part of a complex ecological system, and nutrient loss from farms to the surrounding environment can occur depending on a wide range of factors, such as the type of soil, the level of precipitation, tillage practices, and proximity to sources of water.

AAFC researchers at our centres in Ontario and across the country are investigating strategies to manage nitrogen, phosphorus, and manure in pursuit of improved agricultural practices that improve crop nutrient utilization and reduce losses to the surrounding ecosystem. This research and associated technology transfer efforts will be an important part of AAFC's contribution to the federal government initiatives related to the Great Lakes Water Quality Agreement and the Canada-Ontario agreement.

For instance, here is what some projects include. At Guelph, we have work on assessing the risk of phosphorus losses of different agricultural landscapes. At Harrow, we have research conducted in the Lake Erie basin on strategies to understand and reduce nitrogen losses from fertilizer and manure application and thereby reduce environmental degradation by enhancing crop utilization of nitrogen and performance. We also have projects on understanding the behaviour of phosphorus in animal manures after land application and on the use of cover crops and organic amendments to reduce agricultural pollution of the Great Lakes. In Quebec City we have work on improving phosphorus use efficiency by farmers under different Canadian agro-ecosystems.

In Ontario specifically, a large number of beneficial management practices, or BMPs, have been adopted by producers. Just a few of the more popular ones include: precision agriculture, which is about applying the right amount of nutrients and varying the amount of nutrients applied within a field; farmland and horticultural facilities runoff control, reducing the nutrients in runoff; improved manure storage and handling to reduce nutrient losses to runoff; nutrient recovery from waste water; erosion control structures in riparian areas; and a number of others.

Our role at AAFC is primarily to provide science knowledge that can be used by the sector, the provinces, and others to enhance sector productivity while minimizing negative environmental impacts.

Thank you.

● (1625)

The Chair: Thank you very much, Dr. Campbell. Thank you for being sensitive to our time constraints as well.

We'll move now to Mr. Jeff Moore from Infrastructure Canada.

Mr. Jeff Moore (Assistant Deputy Minister, Policy and Communications, Infrastructure Canada) I'd like to thank the committee for the opportunity to address you today.

My name is Jeff Moore and I'm the assistant deputy minister for policy and communications for Infrastructure Canada. Joining me today is Stephanie Tanton, the director of priority initiatives, also from Infrastructure Canada.

In the context of this committee's study on water quality in the Great Lakes basin, I would like to take a few moments to provide you with an overview of the investments Infrastructure Canada has made to date toward waste water infrastructure, in particular in the Great Lakes Basin, and to provide the committee with some context regarding Infrastructure Canada's role, which I believe will be helpful for any subsequent discussion.

The vast majority of Canada's public infrastructure, well over 90%, is owned by provinces, territories, and municipalities. This includes highways, local roads, bridges, public transit systems, and water and waste water infrastructure. Recognizing the essential role public infrastructure plays in supporting economic competitiveness, a cleaner environment, and stronger communities, the federal government provides funding to provinces, territories, and municipalities for the construction, renewal, and rehabilitation of their infrastructure assets.

[*Translation*]

Established in 2002, Infrastructure Canada has been leading federal efforts in this area, and has been responsible for developing and administering a suite of infrastructure funding programs.

For the most part, these programs have funded a broad range of infrastructure assets, including wastewater infrastructure, and have provided provinces and municipalities with the flexibility to identify their regional needs.

For example, under the green infrastructure fund, which was announced as part of the economic action plan in 2009, funding was specifically targeted to infrastructure projects supporting cleaner air, reduced greenhouse gas emissions and cleaner water. Wastewater infrastructure projects represent the largest investment category under this fund.

[*English*]

Overall, since 2006, the Government of Canada has committed approximately $2.08 billion in direct funding towards 1,590 waste water infrastructure projects across Canada under several building Canada and economic action plan initiatives. This federal funding has leveraged more than $4 billion from other funding partners for a total investment of over $6.1 billion for waste water systems across the country.

The majority of these projects have supported improved management and efficiency of waste water or storm water infrastructure, and the reduction of negative impacts of waste water or storm water effluent on human health and the environment. Among these investments are a significant number that will help improve the quality of waste water effluent being released into the Great Lakes, and five specifically that will contribute towards the delisting of officially designated areas of concern. I would like to tell you about these five.

For instance, in Nipigon Bay near Thunder Bay in northwest Ontario, the federal government contributed $3.45 million towards the Nipigon waste water treatment plant upgrade project. This project, with total eligible costs of $6.9 million, involved adding a secondary waste water treatment process to the plant. The project, which is now complete, has helped improve the quality of effluent being released into the water and will contribute to delisting Nipigon Bay as an area of concern.

Infrastructure Canada is also pleased to be working with the township of Red Rock to upgrade the Red Rock waste water treatment facility. With a federal commitment of $4.5 million, this project will also contribute to the delisting of Nipigon Bay as an area of concern.

The Skyway waste water treatment facility in the Halton region is receiving a federal contribution of $51.5 million to improve its waste water treatment process to reduce the amount of phosphorus discharged into Hamilton harbour. The project has total eligible costs of $158.9 million and once completed in March 2015 will contribute to the delisting of Hamilton harbour as an area of concern. An additional $100 million in federal funding has also been committed towards reducing the amount of contaminants discharged to Hamilton harbour from combined sewer overflows and from the Woodward Avenue waste water treatment plant. With total project costs of just over $300 million, the project will also contribute towards delisting Hamilton harbour as an area of concern once completed in December 2019.

● (1630)

Finally, the $55.5 million Cornwall waste water treatment plant upgrade project received $18.5 million in federal funding to upgrade the treatment of waste water to a secondary level and provide additional treatment capacity. Once completed in July 2014, the project will contribute to delisting the St. Lawrence River as an area of concern.

[*Translation*]

In addition to investments through direct contribution programs, the Government of Canada has provided significant investments to wastewater infrastructure through the gas tax fund.

Based on reports received from our provincial partners, Ontario municipalities have spent approximately $94 million of their federal gas tax funds on wastewater projects since 2005.

[*English*]

To conclude, I would note that waste water infrastructure will continue to be an eligible category of investment under the new building Canada plan. Recognizing that improving waste water treatment and related infrastructure remains a priority for provinces and municipalities, waste water will be an eligible category under the $10-billion provincial and territorial infrastructure component of the new building Canada plan as well as the renewed gas tax fund.

While program parameters are still being finalized, economic action plan 2014 made a commitment to have the new plan operational by March 31, 2014.

[*Translation*]

Thank you for your time. My colleague and I would be happy to answer any questions you may have. Thank you again.

[*English*]

The Chair: Thank you, Mr. Moore.

We'll move now to Mr. Trevor Swerdfager of the Department of Fisheries and Oceans.

I hope I pronounced your name correctly.

Mr. Trevor Swerdfager (Assistant Deputy Minister, Ecosystems and Fisheries Management, Department of Fisheries and Oceans): You pronounced it very well, thank you. It's somewhat unusual—my name, I mean.

Voices: Oh, oh!

Mr. Trevor Swerdfager: David will actually lead our remarks for us.

Mr. David Burden (Acting Regional Director General, Department of Fisheries and Oceans): Good afternoon and thank you for providing Fisheries and Oceans the opportunity to speak to the committee on the water quality issues of the Great Lakes basin.

I am Dave Burden, the regional director general for the department's central and Arctic region, which includes the Great Lakes. With me today is Trevor Swerdfager, our assistant deputy minister of ecosystems and fisheries management operations, and Patrice Simon, from our environment and biodiversity science sector.

Fisheries and Oceans Canada is the lead federal department responsible for managing Canada's commercial, recreational, and aboriginal fisheries, which it does by supporting strong economic growth in our aquatic and fisheries sectors and contributing to clean and healthy sustainable aquatic ecosystems.

The Great Lakes commercial and recreational fisheries contribute substantially to the economy. In 2011 approximately 12,000 tonnes of fish were commercially harvested from the Great Lakes, generating an estimated landed value of $33.6 million. With processing and sales to food stores and restaurants in Ontario, the United States, and around the world, the industry's contribution to the economy was about $234 million Canadian in 2011. The total economic contribution of the recreational and commercial fisheries through spinoffs in the Great Lakes is an estimated $8.3 billion U.S.

Such water quality concerns as sediment, contaminants, and nutrients represent a threat to nearly all commercial, recreational, and aboriginal fisheries that depend on healthy food webs and ecosystems. As such, DFO shares the commitments of the Great Lakes Water Quality Agreement, specifically the objectives of supporting healthy and productive wetlands and habitats to sustain resilient populations of native species free from the threat of aquatic invasive species.

Under the Great Lakes action plan, in partnership with Environment Canada, DFO science delivers critical assessments on the status of fish populations, fish habitat, and the food chain to help ensure the success of restoring areas of concern identified in the water quality agreement.

The renewed Great Lakes Water Quality Agreement also includes a new annex focused on the prevention of aquatic invasive species, and where possible, reducing the impact of the ones that have become established. More than 182 aquatic invasive species have been found in the Great Lakes, and many species that have established and caused negative impact are well known, including sea lamprey, round goby, and zebra mussels.

For more than 50 years, working in coordination with the United States through the Great Lakes Fishery Commission, DFO has delivered the world's largest ongoing invasive species control program suppressing sea lamprey in the Great Lakes. Without this control program, successful restoration and perpetuation of commercial and recreational fisheries and the $1.2 billion they contribute to the Canadian economy would not have been possible. Although the control of sea lamprey is a success story, it also comes at a considerable cost.

Bighead and silver carp are also issues in the Great Lakes. Two of the Asian carp species pose a significant threat to the Great Lakes and have been making their way northwards from the Mississippi River basin towards our Great Lakes. These species have been responsible for the decimation of the commercial fisheries in the Mississippi River basin.

Another Asian carp species, the grass carp, has recently been found to have spawned in the American waters of the Lake Erie basin. However, more information is required to see if there is any establishment of the species, and of course the game is not lost with a few individual fish found in the waters. DFO, along with our domestic and American colleagues, remains vigilant in finding and removing those individuals from the system immediately.

In 2012, Fisheries and Oceans announced five years of funding for a proactive program for Asian carp in the Great Lakes. The program consists of four pillars: prevention, early warning, response, and management. The program has had many successes to date, such as the development of partnerships and outreach to the Canadian public about the threat posed by Asian carp, development of early detection and surveillance sites along the Great Lakes, and the successful removal of two infertile grass carps in Canadian waters. We are also embarking on a binational risk assessment for grass carp, in concert with the White House-led Asian carp regional coordinating committee, to provide key science advice on the specific threats posed by this species for managers and decision-makers on the Great Lakes.

Unmanaged ballast water has historically been a very important vector of invasive species to the Great Lakes. With the implementation of mandatory science-based ballast water regulations for vessels arriving to the Great Lakes from outside Canadian waters, the risk of ship-mediated invasions in the Great Lakes has been greatly reduced, but not eliminated. DFO continues to conduct research on this pathway and support Transport Canada in their regulatory work.

● (1635)

DFO is also currently drafting national aquatic invasive species regulations, with a goal of preventing the introduction and establishment of high-risk aquatic invasive species. We aim to have this regulation published in the spring of 2014.

Our department is also a signatory to the Great Lakes Fishery Commission's joint action plan, which ensures that all jurisdictions with management authority work together to protect, restore, and sustain fisheries of common concern in the shared Great Lakes. Fisheries and Oceans provides scientific and technical input in the setting of fish community objectives and shared objectives for fisheries on the Great Lakes.

While the Province of Ontario leads the management of fisheries in the province, sustaining fisheries and remediating fish habitat is a shared responsibility between our department and the Ministry of Natural Resources. We collaborate through the Canada-Ontario Fisheries Advisory Board to deliver the management and science to protect and enhance our fish populations and fisheries. The board provides the basis for collaboration on protection of fish habitat and fisheries; collaborative aquatic invasive species monitoring and response efforts, like those for the Asian carp; coordination of aquaculture management; and collaborative science programs.

DFO also supports the restoration, rebuilding and rehabilitating of recreational fisheries habitat through the recreational fisheries conservation partnerships program, which in 2013 allocated approximately $1.3 million of eligible funds for recreational fisheries enhancement work in the Great Lakes watershed. As we saw earlier this week, the budget offered additional funding for this program, and we look forward to new projects and new partnerships in the coming years.

Fisheries and Oceans also collaborates with a number of partners to protect lake habitat that supports our fisheries. Aquatic Habitat Toronto is a partnership of municipal, provincial, and federal agencies with a vested interest in improving aquatic habitat on the Toronto waterfront. DFO in cooperation with the Ontario Ministry of Natural Resources, Toronto and regional conservation groups, Waterfront Toronto, Environment Canada, and the City of Toronto are responsible for the implementation of the Toronto waterfront aquatic habitat restoration strategy, which involves habitat mitigation, restoration, and supporting science.

Another great example of work we're doing is lidar mapping. With this initiative we have been able to make a critical start at efforts to map the depths and the contours of the very near shore in some very key areas in the Lake Huron and Georgian Bay areas. This new effort meets a number of critical needs under the Great Lakes Water Quality Agreement, and goes beyond that. Along with creating a new baseline inventory of habitat to support fisheries, this data provide new information to help navigation and shoreline adaptation to changes in water depth for DFO and our colleagues at Environment Canada.

Thank you, Mr. Chairman, for inviting us to speak this afternoon. We'd be pleased to take questions from the committee.

● (1640)

The Chair: Thank you, Mr. Burden.

We're going to move immediately to our seven-minute rounds of questioning.

We're going to begin with Mr. Woodworth.

Mr. Stephen Woodworth: My thanks to the witnesses for their input thus far. It's a whole lot of information for us to take in, in a short sitting, so I'm going to try to pick off a few things here and there.

I'll begin with Mr. Burden.

We heard earlier about the designation of a variety of areas of concern in the Great Lakes area. I wondered if DFO had input into those. If so, what kinds of factors would be used by DFO to reach a conclusion that a specific area was an area of concern?

Mr. David Burden: All of our work related to area concerns is a very cooperative venture. We work hand in hand with Environment Canada and obviously with our domestic partners such as Ontario under the Great Lakes Water Quality Agreement. Our department is involved in this work. We have a support role for Environment Canada on these.

I'm not quite sure how much further you'd like me to go on that, other than to say that all of the work is being done in a cooperative fashion.

Mr. Stephen Woodworth: Okay.

I also was interested in the $1.3 million that you mentioned relating to eligible funding for recreational fisheries enhancement work. Do you have with you any specifics so that you could give us a bit of an overview of what kinds of projects that has resulted in?

Mr. David Burden: As I said, that $1.3 million was the money that was invested in the Great Lakes basin. There were a number of projects.

I don't know, Trevor, if you have some specifics on the program as it relates to the specifics in community groups.

Mr. Trevor Swerdfager: There's quite a range of activities that are undertaken. The focus is very much on recreational fisheries and specifically related to aquatic habitat restoration. It's about a $5-million program nationally. It's run entirely on a leverage basis so that each dollar the federal government puts in, so far at least, is returned at about $2.50 to $3, depending on where it is. To give you examples, they range from fairly small stream-based, restoration-type projects, stream-bed stabilization, a number of things, all around the riparian and aquatic habitat, through to some much more substantial undertakings, primarily in the Prairies where some of the bigger multi-partner initiatives are.

I guess I would summarize it by saying in terms of the nature of the projects undertaken, they're very much boots on the ground, tangible things. There's nothing in there for planning, outreach, communication—and I don't want to sound pejorative—that sort of softer stuff. It's all very nuts and bolts type of stuff in the water.

● (1645)

Mr. Stephen Woodworth: I also wondered if DFO has any information about changes, either for better or for worse, in the commercial catch coming out of the Great Lakes. You mentioned the figure for 2011. I wonder if you could give us an idea of the trend line on that.

Mr. David Burden: I think probably the data I provided is the most current data I have at my disposal today, Mr. Chair, but we could provide the committee with additional information to help address that question for you.

Mr. Stephen Woodworth: Sure. I guess what I'm wondering about is if the efforts that have been made over the last 10 or 20 years have been showing up in an increase or not in the commercial catch. If you do have any information which would be comparative in nature, I'd be grateful to receive it.

I'd like to move on to the Agriculture department. I regret I didn't have time to ask the Environment department folks about the Great Lakes nutrient initiative, but, Mr. Campbell, in listening to your presentation, it seemed to have to do a lot with the issue of nutrient runoff, I guess I'll call it.

I wonder if you might tell us what involvement, if any, Agriculture and Agri-Food Canada has in that Great Lakes nutrient initiative.

Dr. Ian Campbell: I don't think I'd be able to speak to very specific cases. I don't have that information with me. We could certainly find it for you, if you want. We do a lot of our work in collaboration, both with the Province of Ontario and with Environment Canada. It could actually become quite difficult, I would imagine, to disentangle projects that do and do not have some connection. Most of the work that we do in that area probably has some connection, however tenuous it might be.

Mr. Stephen Woodworth: All right. It's just not a formal role in the initiative itself, then.

Dr. Ian Campbell: Not a formal role, no, but we do a lot of collaborative work.

Mr. Stephen Woodworth: We're going to be hearing from the Grand River Conservation Authority later in this study, but do you have any information that would tell you the degree to which your department collaborates with that agency?

Dr. Ian Campbell: Again, we have collaborative work. We do work within the watershed. Do we have formal agreements? We probably do around specific projects, but I would have to look for further information for you.

Mr. Stephen Woodworth: All right.

Does your work regarding nutrients involve solely scientific investigation around best practices, or do you also engage in monitoring of the nutrient flow into the Great Lakes?

Dr. Ian Campbell: It's solely best practices work. We don't monitor the flow into the lakes at all, no.

Mr. Stephen Woodworth: Mr. Burden, I was interested in your comments about Aquatic Habitat Toronto. I wonder if you could describe a little bit more for us the specific work this agency has done in cooperation or collaboration with DFO in mitigating environmental impacts or other projects in the Toronto area and the Great Lakes.

Mr. David Burden: Actually, it's a very unique and interesting approach. There's a development angle to it. Urban sprawl is obviously an issue in the Great Lakes. This initiative looks at creating a bank of improved habitat in the areas around the greater Toronto area that can be used to offset some of the degradation from some of the development and urban sprawl that's going on in that area.

The Chair: We're going to be really tight with time.

Thank you, Mr. Woodworth.

We're going to move now to Madame Freeman, for a seven-minute round.

Ms. Mylène Freeman: Thank you, Chair, and thanks to our witnesses who are here to help us start off this new study well informed. I have some basic questions for all of you.

[*Translation*]

My first question is for the Department of Agriculture and Agri-Food official.

Ontario has implemented projects to address the destruction of coastal wetlands and riparian habitats. Could you please explain to the committee what is being done in that respect as far as farmers are concerned?

● (1650)

Dr. Ian Campbell: I could not tell you anything about farmers specifically. We strictly carry out scientific research. We rarely study specific situations. In fact, I don't believe we've done much work on coastal wetlands.

Ms. Mylène Freeman: Very well.

The Great Lakes get a lot of farm runoff that adds nutrients, including phosphorus. And phosphorus causes algae bloom, which damages fish habitat.

Could you please enlighten us as to the current and planned efforts to address this situation?

Dr. Ian Campbell: As I said in my presentation, we conduct scientific research with the goal of understanding best practices and beneficial management practices.

Ms. Mylène Freeman: Could you tell us about some of the best practices?

Dr. Ian Campbell: Yes, I mentioned a few of them. An example would be the use of precision agriculture to try to spread the right fertilizers to the right areas at the right time. Our research focuses on other practices as well, such as controlled tile drainage. And there are other practices that could be fairly effective at reducing the flow of phosphorus.

Ms. Mylène Freeman: Thank you.

I will now move on to the Infrastructure Canada officials.

During your presentation, you said that wastewater treatment would still be an eligible investment category under the new building Canada plan. You also called wastewater treatment a priority, saying it had a major impact on contamination.

I would just like you to clarify something about wastewater treatment, if you would. Here, it talks about municipal infrastructure. How is the whole issue of individuals with septic systems dealt with, for example? Is that done?

Mr. Jeff Moore: Infrastructure Canada does not support projects at the individual level.

Ms. Mylène Freeman: You work with municipalities.

Mr. Jeff Moore: Normally, we work with the provinces and territories. They are the authorities that identify the priorities for their own province or territory. We work with them to fund the projects. We usually cover 33% of the costs associated with a project, but it can be as much as 50%.

Ms. Mylène Freeman: Basically, if there were a project targeting individuals, it would possibly go through the municipality, is that right?

Mr. Jeff Moore: It depends. The municipality would have to decide that the project was a priority, and it would have to work with the province to make that decision. It would have to be a municipal project.

Ms. Mylène Freeman: It would still be worthwhile. Let's say some municipality wanted to have a program that would offer financial support to help people who have septic systems. How would that work?

I am less familiar with the Great Lakes region, but I do know that other areas are having problems as well, like my riding. Is this something that would be possible? How would a project proposal like this proceed?

Mr. Jeff Moore: Under normal circumstances, I think the project would have to directly support the entire municipality. And as I said, we don't usually work with individuals. The project would also have to meet the program criteria for grants and contributions.

Ms. Mylène Freeman: That is interesting.

Thank you. I have no further questions.

[*English*]

I have one question for Fisheries and Oceans.

I'm not very familiar with the Fisheries Act. I'm new to this committee, so I'm getting to know all the related legislation.

Could you explain to this committee the most recent changes to the Fisheries Act, and how they would affect the monitoring of the Great Lakes fisheries?

● (1655)

Mr. Trevor Swerdfager: I guess the way I would summarize the changes to the Fisheries Act is that insofar as fisheries management is concerned, they're quite limited. Really, the changes to the Fisheries Act focus mostly on section 35, which changed the provisions we use to manage and protect habitat, and make a shift from the protection of all aquatic habitat basically in all circumstances across the country to focusing the act much more on the protection of habitat necessary for commercial, recreational and aboriginal fisheries.

There are a number of changes as well to the enforcement provisions and the penalty provisions associated with that, but for the most part, insofar as how we manage fisheries in the Great Lakes or anywhere else for that matter is concerned, the recent changes to the act have no real impact on that whatsoever.

Ms. Mylène Freeman: If there's one problem that needs to be addressed for you, what would it be?

Mr. David Burden: I guess the biggest challenge we have in the Great Lakes would be the issues around invasive species and how we respond to that. We talked about algae blooms earlier. You can look at the indices and say that it's a glass half full or half empty, but quagga mussels and zebra mussels have helped with water clarity, but they're also a major source for algae bloom as well.

Ms. Mylène Freeman: Thank you.

The Chair: Thank you, Madame Freeman.

We move now to Mr. Carrie, for seven minutes.

Mr. Colin Carrie: I want to thank the witnesses today. I find this to be extremely interesting.

I want to start off by asking a question. Dr. Campbell, I think it was you who mentioned Harrow and the use of cover crops and organic amendments that helped decrease pollution. Was that you who mentioned that in your opening speech?

Dr. Ian Campbell: I'm not sure if I got into quite that much detail, but I did mention work at Harrow.

Mr. Colin Carrie: My background is more into natural health care medicine. I remember so many people bringing up with me the organic versus traditional type of fertilizers. I was wondering if there's anything you could comment on about how effective the organic route is in decreasing problematic effluents into the lakes. Are there any results or anything you could tell us about what's going on there?

Dr. Ian Campbell: I don't think we have any particular research on that very specifically. In general, organic production may or may not be more conserving of nutrients, if I can put it that way. It depends an awful lot on soils, on tillage practices. Just because it's organic doesn't mean you're using one particular tillage practice over another tillage practice. It will depend a lot on what practices you're using in your organic practices. There's no specific set of practices that qualify as organic, and quite a range of potential outcomes.

Mr. Colin Carrie: I have another question kind of along the same line.

I remember patients always wondering about medication, hormones being released into the lakes. We're looking at water quality with this study. Does anybody look at that? Is it a problem? Does anybody have any comments about awareness of having hormones or medications being put into the Great Lakes?

The Chair: Do you want to tackle that one?

Mr. Colin Carrie: No one wants to tackle that one.

The Chair: We may have missed our opportunity with the previous witnesses on that question.

Mr. Colin Carrie: It's something that is brought up with me and I was curious to see if anybody is actually looking at that.

I do want to ask about infrastructure. Since 2006 I know there's been record investments in infrastructure. I was wondering how important this investment in infrastructure is in helping municipalities improve their waste water systems. How much money have they been able to leverage? How does it help these problematic areas of concern? How does it help them become delisted?

The Chair: Mr. Moore.

Mr. Jeff Moore: That's a very good question.

In terms of waste water as a priority category, it is a category in a number of our programs, including the green infrastructure fund and under the building Canada fund as well. If you look at what we've done nationally in terms of waste water, I think I mentioned in my remarks that we've supported close to 1,600 projects and committed about $2 billion. It depends on the nature of the project, but usually we'll leverage another two-thirds. We'll normally invest in one-third of a municipal project and sometimes we can go as high as 50%, particularly under a program like the green infrastructure fund.

I would like to take the opportunity to talk about the Great Lakes for a second. In the Great Lakes area, since 2006 we've supported 173 projects. Within those 173 projects we've committed $631 million out of 1.8 billion dollars' worth of costs in waste water projects. Not all of these would have a direct impact on areas of concern in the Great Lakes waters, but those are the types of projects we would have in the surrounding area.

I'm sorry, you had one other part to that question, but I didn't get to it.

● (1700)

Mr. Colin Carrie: I was curious how these investments allow municipalities to leverage their investments. How does it help them become delisted? In these areas of concern, we hear we're on track to have them finished by 2025. How does it help the municipalities get to the point where they need to be?

Mr. Jeff Moore: With the projects we support, we're just one piece of the puzzle in terms of delisting an area as being an area of concern. A great example is Red Rock where we're actually the last piece of the puzzle in getting the area delisted. Once that project is complete, that area will be delisted. Is that right?

A voice: Nipigon Bay.

Mr. Jeff Moore: Nipigon Bay. When we fund waste water projects, we're looking at trying to treat the waste water that's being introduced into the water. That's just one way our programming will contribute towards areas of concern in getting them delisted.

Mr. Colin Carrie: Thank you very much.

We have been given a chart and it shows Canadian and U.S. areas of concern. I noticed the Canadian ones, and I noticed quite a few more on the American side.

Do you or anybody have statistics about waste water effluents in the Great Lakes percentage-wise between Canada and the U.S.? For Canada and the U.S. are the regulations similar? How is the U.S. doing relative to Canada, or how is Canada doing relative to the U.S. with respect to these areas of concern and having them properly remediated?

Mr. Jeff Moore: From our perspective, we wouldn't have that information. I would guess that Environment Canada probably would have that information if you're looking for it.

Mr. Colin Carrie: Are there any other comments on that? That's good.

The Chair: You have 30 seconds, Mr. Carrie.

Mr. Colin Carrie: That's it.

The Chair: We'll move on then to Mr. McKay.

Hon. John McKay: Do you mind if I take his 30 seconds?

The Chair: I do actually, but we won't tell anybody.

Hon. John McKay: I want to ask a follow-up on Mr. Swerdfager's response to Ms. Freeman's question and the change in the Fisheries Act.

Now you only follow fish where there's serious harm to the fish, but they must be part of a commercial, recreation, or aboriginal fishery. What I don't understand is there's an entire food chain here. How you determine what is commercial, recreational, or aboriginal is another issue, but how do you only follow that subset of the universe of the food chain?

Mr. Trevor Swerdfager: I don't have the text of the act in front of me, but I used to be able to quote it almost verbatim. One of the key provisions of it says "...fish that are part of a commercial, recreational or Aboriginal fishery, or to fish that support such a fishery." To use your example, the idea of the act is set up so that the fish we focus on goes down the food chain. It's not just simply the apex predator, or the high trophic levels of the ecosystem. If you're looking at a fish and fish habitat that is supportive of other fish, but is not the target of a fishery, the Fisheries Act still kicks in, in so far as section 35 protections are concerned.

Perhaps I should have expanded earlier, because the question was focused just on what changed. In light of this conversation, we should also keep in mind that section 36 of the Fisheries Act, which is administered primarily by our colleagues at Environment Canada, is a blanket protection with respect to pollution in a fish habitat context as well. That provision was not changed as part of the recent changes in the act. It puts in place a comprehensive protection against the deposit of deleterious substances into waters frequented by fish.That remains intact and hasn't changed.

● (1705)

Hon. John McKay: I'm still a little confused, but since I have only a few minutes left, I'll let it go. It does strike me as a distinction without a difference.

Mr. Burden, you have a map attached to your presentation. What caught my attention was the two pink sections showing diverted drainage.

I understand what diverted drainage means in principle, but does that mean the drainage shown in these particular pink sections is diverted into the Great Lakes or away from the Great Lakes? What does that mean?

Mr. David Burden: I'll actually have to get back to you on that. I noticed the map when I was flying in last night, and I saw the indication of that, but I can't answer the question.

We'll get back to you on that.

Hon. John McKay: You said to yourself, "Some idiot's going to ask me what that means", right?

Mr. David Burden: No, if I'd thought of that, I would have asked somebody.

Voices: Oh, oh!

Hon. John McKay: I see. All right.

The page previous to that refers to your work with respect to Ontario Power Generation's work close to Lake Huron. The way I understand your paragraph, you've been engaged to consider the fish habitat that would be generated by virtue of the burying of nuclear waste.

Can you expand on that and tell us how far down they're going to bury it? What's the proximity to Lake Huron? Is it below the water table, or can you ever have anything that's below the water table?

Expand on that paragraph a bit, please.

Mr. David Burden: I don't have the exact information on that, but it's 600-odd metres below the surface. It is, I believe, a couple of kilometres from the lake.

We've undertaken a review, and we've provided our information to the Canadian nuclear safety agency. From our perspective, we don't see that there will be any direct impact to fisheries or fisheries habitat as a result of that project. We're there as a technical support to the Canadian nuclear safety agency, but we're not directly a responsible authority.

Hon. John McKay: Is it reasonable to assume that it's below the water table?

Mr. David Burden: That's beyond my expertise.

Hon. John McKay: Okay.

In the possibility that we have extreme weather events—and we are having them. We can't mention the term "climate change" around here, but in extreme weather events, it's maybe not unreasonable to assume....

Even this winter there has been a massive amount of snow. There may well be a pretty significant thaw very quickly, and you might have a flood.

If you had a flood in that area, how would it impact on the storage of this nuclear waste?

Mr. David Burden: That's beyond our mandate and our area of expertise to discuss today.

Hon. John McKay: It is an issue that comes up pretty regularly, I have to say.

You also made a curious comment about zebra mussels helping with water clarity but contributing to algae. How does that work?

Mr. David Burden: Patrice is probably a better person to answer this question, but I will say that we see water clarity improve, basically because they're out-competing the native species in the watershed. As a result of that, you have the excrement, I guess, from these zebra and quagga mussels, which is producing more protein or phosphorus-type products, and that enhances the growth of algae blooms.

Do you want to add to that, Patrice?

Mr. Patrice Simon (Director, Environment and Biodiversity Science, Department of Fisheries and Oceans): No, I think that's good, Dave.

Hon. John McKay: Even though they kind of attach themselves to the sewer pipes, water pipes, or whatever else goes into the Great Lakes system, their excrement actually contributes too.

Mr. David Burden: Yes.

Hon. John McKay: That's kind of interesting.

Dr. Campbell—

The Chair: You have 15 seconds left, Mr. McKay.

Hon. John McKay: Oh.

I'll give away my 15 seconds, unlike the ungenerous ones among us.

● (1710)

The Chair: You are very generous. Thank you.

I'm sorry, but our time is up. I see we're right on 5:10.

I want to thank our witnesses for being here today. Thank you for your expertise and involvement.

We'll now go in camera to deal with committee business.

[*Proceedings continue in camera*]