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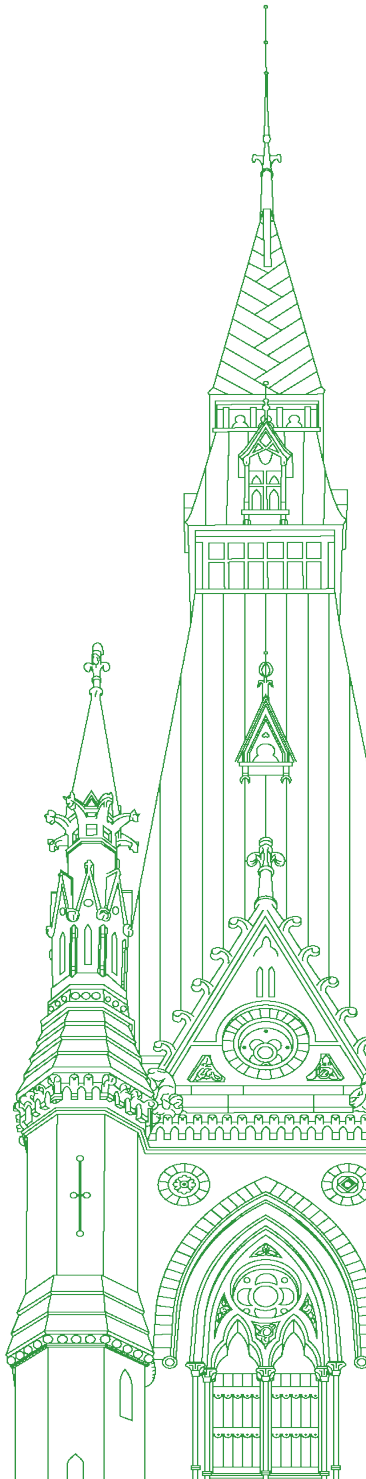

Chair: Mr. Francis Scarpaleggia

Standing Committee on Environment and Sustainable Development

Thursday, February 1, 2024

● (1530)

[*Translation*]

The Chair (Mr. Francis Scarpaleggia (Lac-Saint-Louis, Lib.)): Good afternoon, colleagues and guests—

Mr. Gérard Deltell (Louis-Saint-Laurent, CPC): Mr. Chair, as you know, on December 14, 2023, the Minister of Environment, here in committee, promised to provide us with all the details of the expenses related to his trip to Dubai, as well as a summary of the meetings, and to give us the list of the senators he had called regarding Bill C-234.

Do you have any news from the minister?

The Chair: No. Unfortunately, I haven't seen him. I'll do my best to contact him after the meeting, through an intermediary. I looked for him yesterday, but he wasn't—

Mr. Gérard Deltell: If you want, I can give you his phone number. I could even text him now.

The Chair: Maybe I should have called him instead of waiting to see him in person, but we'll check that after the meeting. I'm 100% committed to that. I'm curious about that as well.

Mr. Gérard Deltell: Thank you, Mr. Chair.

[*English*]

The Chair: Go ahead, Mr. Leslie.

Mr. Branden Leslie (Portage—Lisgar, CPC): I apologize. I was not here on Tuesday, but I was watching intently while trying to deal with my new baby.

The Chair: Oh, congratulations.

Mr. Branden Leslie: Thank you.

You mentioned that you were going to talk to Minister Guilbeault yesterday, I believe.

The Chair: Yes, I looked for him yesterday, but I couldn't find him. As Mr. Deltell suggested, there's something called the telephone. I could have called him. I didn't think of that. *Mea culpa*. After this meeting, I will endeavour to get the answer through an intermediary, unless I see him in the next half hour, which I don't think I will, but I'm on it.

Mr. Garnett Genuis (Sherwood Park—Fort Saskatchewan, CPC): We could report a motion to the House calling on him to call you. Would that help?

The Chair: I don't know. You're the expert in parliamentary procedure, Mr. Genuis.

Mr. Garnett Genuis: Is there agreement to do that?

It seems like there's agreement on the committee.

The Chair: I don't think there's agreement, no.

[*Translation*]

I would now like to provide a brief update. We're going to prepare a travel budget to go to Alberta. All parties agree to do this during a break week, more specifically during the week of May 13. We'll get back to you on that.

Ms. Pauzé, I want to inform you that the sound tests were carried out with great success.

I would now like to welcome Mr. Weir and Mr. Schryer, from the Ontario Federation of Anglers and Hunters, and Rébecca Pétrin and Gabrielle Roy-Grégoire, from Eau Secours. We also have witnesses joining us by videoconference: Martyn Clark and Alain Pietroniro from the University of Calgary, as well as Justine Nelson and Miki Eslake from the Rivershed Society of British Columbia.

[*English*]

We'll get started with opening statements. I'll go in the order in which the names appear on my sheet here.

Who will be speaking on behalf of the University of Calgary? Is it Mr. Clark or Mr. Pietroniro?

● (1535)

Mr. Alain Pietroniro (Professor, Department of Civil Engineering, University of Calgary, As an Individual): We will be sharing the discussion.

The Chair: Okay. You have five minutes. You can share it whichever way you feel is best.

Mr. Alain Pietroniro: Thank you, Mr. Chair.

We want to thank you for the opportunity to speak to the committee today. We're both honoured to have been afforded the time of the committee.

This brief is being provided to underscore the critical need for a cohesive and collaborative approach to environmental prediction in Canada. We strongly advocate developing a co-operative institute that supports collaboration across academia, government and industry.

First, we know environmental predictions play a pivotal role in decision-making processes. They influence strategies related to infrastructure development, environmental stewardship, resource allocation and public safety. However, the absence of a cohesive and nationally coordinated prediction system in Canada has led to a fragmented prediction landscape. Academic contributions often exist as disjointed, short-term projects, while government capabilities are unevenly distributed across provincial and federal jurisdictions. This fragmentation results in inconsistent resource allocation and duplicated services.

Professor Martyn Clark (Professor, Hydrology, University of Calgary, As an Individual): We argue that there are glaring opportunities to establish a national community of practice and environmental protection. Canada is the only G7 country without coordinated capabilities for predicting environmental risks. It is critical to support collaboration across the provincial, territorial and federal governments and academia and the private sector to strengthen resilience to environmental change.

A proposed solution will enable research and operational groups across Canada to contribute the unique data, information, knowledge and predictive capabilities to support mitigating and adapting to water crises. A co-operative institute will support the development of next-generation capabilities to predict floods, droughts, water quality hot spots, wildfires and ecosystem health.

We propose the creation of a Canadian co-operative institute for environmental prediction, inspired by successful models such as the cooperative institute program in the United States. This co-operative institute would serve as a hub that integrates research across universities, government bodies and the private sector. The proposed co-operative institute is essential to develop the data, information and predictive capabilities crucial for climate change adaptation and disaster risk reduction.

The proposed strategy outlines key transformations necessary for Canada to emerge as a global leader in environmental prediction. It advocates for a shift from a traditional loading-dock approach to a more strategic focus on critical science and engineering questions. The co-operative institute will modernize the prediction ecosystem for Canada to accelerate the transfer of prediction technologies from research to operations.

The co-operative institute will do this by developing a computational prediction framework that will serve as a shadow system for the operational systems employed by Environment and Climate Change Canada and the provinces and territories, enabling scientists from both the research and operational communities to rapidly develop and evaluate new modelling and prediction methods.

The co-operative institute will also support greater collaboration across academia, government and the private sector, including developing shared computing solutions, establishing a career track for research scientists at universities and developing training and exchange programs.

Mr. Alain Pietroniro: We recommend the establishment of a federal funding platform allocating $50 million annually for research efforts focused on environmental prediction. Additionally, we propose an ongoing investment of $30 million every five years for dedicated data and computing infrastructure.

The reality is that we are running short on time to ensure the safety and security of Canadians. The devastating floods, droughts, algal blooms, wildfires and drinking water advisories that are acutely felt across Canada affect our personal safety, our way of life and the health of our ecosystems, and they're having a growing impact on our economy. A Manhattan Project type of approach to helping us adapt to and deal with the coming environmental realities is required. We believe that the Canada water agency affords us an opportunity for this development.

Prof. Martyn Clark: In conclusion, the proposed solutions and this comprehensive briefing represent a pivotal moment for Canada to substantially enhance its predictive capabilities, fortifying the nation's ability to respond effectively to environmental challenges. The only thing missing at this transformational moment is the will and the agency to build and nurture a more dynamic and effective community engaged in environmental protection. Doing so will require bold and visionary leadership at all levels of government and academia.

[*Translation*]

The Chair: Thank you. Your time is up.

We'll now go to Eau Secours, and I assume Mrs. Pétrin will be speaking.

● (1540)

Mrs. Rébecca Pétrin (Chief Executive Officer, Eau Secours): Yes, exactly.

The most recent UNESCO report in 2023 mentioned that water use conflicts between agricultural and urban areas will become increasingly frequent and, unfortunately, Canada will not be spared from those conflicts either.

Cases of water scarcity have already been richly documented across the country. Just this morning, Canada's National Observer's website mentioned the case of Alberta.

As a representative of an organization that works for civil rights, today I would like to highlight the four problems that we regularly face regarding the advancement of responsible water management.

First, there is a knowledge gap problem. Our organization is mostly in Quebec, but we do a lot of work with other organizations across the country. It is very difficult to harmonize data from one province to another and to have enough data on water quality, use and renewal.

Second, the levels of government delegate jurisdictions to each other, that is, from municipalities to provinces and from provinces to the federal government, and there is a misalignment in this delegation of powers. We are seeing a lack of leadership by the Government of Canada to advance the objectives it has set with the international community and the provinces, because there is a lack of control and power over the jurisdictions that are granted at the provincial level.

Third, there is the whole matter of water issues that don't come under any jurisdiction. We often face a lack of accountability on the part of ministers and elected officials. In fact, the municipalities are passing the buck to the province, and the province is passing the buck to the feds. I could name a case here that maybe some of you have heard of. This is the case of the community of Kanesatake, north of Montreal. For a number of years now, there has been a game of ping-pong between these various jurisdictions.

Lastly, we are often faced with another problem: federal entities, located in the provinces, emit contaminants into the environment, either in the water, in the air or in the soil. They work on their own, that is to say that there is a poor link with provincial authorities. We can think of ports, airports and indigenous communities, which depend a great deal on federal jurisdiction when it comes to the supply of drinking water, among other things. As a general rule, drinking water is a provincial jurisdiction, except in indigenous communities. So there could be better harmonization in that regard. There is also the hazardous waste landfill being built on the Ottawa River, which is a federal entity. This project will have adverse consequences, major environmental impacts on water, and the provinces will have to manage those impacts.

I would now like to present two potential solutions that we are proposing.

First of all, the announcement of the Canada water agency was obviously very well received by our organization, because we see it as a model of leadership for the Canadian government. We see this agency as a model water observatory, whose mandate would be to compile information, to put in place knowledge acquisition programs, to build capacity in the provinces, and to harmonize all the programs that are set up in those provinces to enable them to go further. We are proposing measures to monitor the achievement of targets, a responsibility that would be shared across Canada. There are 16 sustainable development goals, and water is one of them, including the protection of aquatic environments, to which Canada is committed. Objectives must be put in place, Canada-wide targets must be met and measures must be put in place to monitor the achievement of those objectives. That could very well be translated into an observatory model through the Canada Water Agency. It could also be a type of governance. We have several models in mind, including the Forum d'action sur l'eau, which exists in Quebec. It's a very inclusive governance model for all representatives of society.

Our organization is a representative organization of citizen rights. We also advocate the establishment of a pan-Canadian network of organizations in society that would, for the most part, make it possible to put in place a well-deployed education and training network for the entire population, as well as better communication between the various governments and citizen communities. This network would also make it possible to strengthen and support Canada's progress in achieving its objectives at the provincial level, because we know that citizens have a role to play in political representation with their local elected representatives.

● (1545)

That concludes our presentation, Mr. Chair.

The Chair: Thank you.

We'll now go to the Ontario Federation of Anglers and Hunters.

[*English*]

Mr. Weir, go ahead, please.

Mr. Adam Weir (Fisheries Biologist, Ontario Federation of Anglers and Hunters): Good afternoon, Mr. Chair and members of the committee. On behalf of the Ontario Federation of Anglers and Hunters, I would like to thank you for inviting us to talk about the importance of fresh water.

The OFAH is Ontario's largest not-for-profit fish and wildlife conservation-based organization. It represents 100,000 members, subscribers and supporters, and 725 member clubs. It strives to ensure the protection of our outdoor heritage and it encourages safe and responsible participation in activities like fishing and hunting. It champions the conservation of Ontario's fish and wildlife resources.

Of particular relevance to this committee's discussion is our interest in the management of fresh water, conservation of aquatic habitats and the ongoing threat of aquatic invasive species. Our team of biologists and professional staff conducts technical analysis and responds to environmental and fisheries-related policies, regulations and legislation at provincial and federal levels. We also coordinate several programs that benefit fisheries conservation.

In our last presentation to committee, we highlighted some of the conservation initiatives the OFAH is involved in, such as Ontario's invading species awareness program, through which we engage the public on aquatic invasive species, address high-risk pathways and facilitate monitoring and early detection.

We also administer the Lake Ontario Atlantic salmon restoration program and the community hatchery program.

Today I would like to take the opportunity to discuss the Canada Water Act and the Canada water agency and how these relate to OFAH and our members.

From our understanding, the act and agency are meant to provide for the management of aquatic resources through research and programs involving, among other things, conservation and utilization of water resources, but what are the best ways to keep our water clean and well managed? What opportunities are there for improving, restoring and protecting these valuable resources?

Our experiences have taught us the importance of connecting people to the outdoors through fishing and hunting, as these activities create value towards natural resources. Value promotes stewardship and stewardship benefits species and their habitats. While the focus is oftentimes on improving water quality for the purposes of things like clean drinking water and clean beaches, which are obviously important, we see prioritizing recreational fisheries as an excellent opportunity for addressing water-related issues and challenges.

Healthy and sustainable fisheries are synonymous with clean water resources. They go hand in hand. Focusing on recreational fisheries will help achieve most, if not all, water health and water quality goals and objectives. Fishing contributes to the nutritional needs and the social, economic and cultural well-being of individuals in communities all across Canada. Therefore, supporting nearly three million anglers across Canada, who spend close to $19 billion annually, and leveraging opportunities in this way will only pay dividends for the conservation of water resources now and into the future.

There's a need to reinvigorate a program similar to the recreational fisheries conservation partnerships program to restore, rebuild and rehabilitate Canada's recreational fisheries habitat. This can be achieved by providing funding to recreational fishing groups and conservation organizations like OFAH to undertake projects that support these objectives. Infrastructure investment into boat launches, better parking and boat washing stations will lend itself directly to engaging Canadians in the outdoors, creating lasting, meaningful connections to nature as well having positive economic outcomes.

The OFAH has established its own student research grant program that it's piloting this year, through which longer-term funding arrangements will be provided to students to complete their graduate work on fish- and wildlife-related research projects. In 2022, we also established our community conservation fund to support various initiatives, including fish and wildlife conservation projects, habitat restoration and protection, and invasive species mitigation.

On a nationwide scale, the Canada water agency should seek out opportunities in a similar way by investing in research related to recreational fisheries, creating funding mechanisms to support grassroots community actions and engaging Canadians in prevention and management of aquatic invasive species.

Fish and fishing are tangible. They are things that most Canadians can relate to. They foster a healthy lifestyle, an appreciation for nature and the outdoors, and a sense of stewardship towards the land and the water.

We look forward to working with the federal government and the Canada water agency to find the best ways to keep our water safe, clean and well managed by prioritizing Canada's recreational fisheries.

Thank you.

● (1550)

The Chair: Thank you very much.

We'll turn now to Ms. Nelson of the Rivershed Society of British Columbia.

I assume you will be presenting.

Ms. Miki Eslake (Program Coordinator, Rivershed Society of British Columbia): Justine and I will be splitting the time today.

The Chair: Go ahead.

Ms. Miki Eslake: Good afternoon, everyone. Thank you very much for this opportunity to participate in this important study on fresh water.

I'm joining you today from the traditional territory of the Musqueam, Squamish and Tsleil-Waututh peoples in Vancouver, British Columbia.

My name is Miki Eslake. I am a program coordinator with the Rivershed Society of BC and I am here today with Rivershed's executive director, Justine Nelson.

Rivershed was founded in 1996 by Fin Donnelly after he swam the entire length of the Fraser River. He did this to raise awareness of the critical role that the Fraser plays in supporting salmon, people and the economy.

We have an ambitious vision: to see the Fraser as a resilient watershed with salmon, people and economies flourishing in rivershed communities.

The Fraser is truly the heart and soul of British Columbia and its watershed is the cornerstone of our ecological, cultural and economic vitality, but it faces significant challenges.

One of those challenges is the alarming decline of salmon returning to the Fraser. Historically, 50 million sockeye return to the Fraser every year. In 2022, despite it being a dominant year, only 5.5 million returned. Salmon are both key elements of a healthy watershed and key indicators of it, so it's important to take this decline seriously.

The climate crisis is a water crisis, and the health of our watersheds plays a critical role in providing natural defences against climate change impacts including droughts, wildfires and floods.

To effectively advance the freshwater agenda in Canada, the government must uphold its commitment to invest $1 billion in the freshwater action plan. This investment must support watersheds like the Fraser and prioritize actions in collaboration with indigenous peoples.

The Fraser is listed by the government as a priority watershed, but funds allocated under the freshwater action plan have been disproportionately spent elsewhere, leaving the Fraser watershed underfunded and vulnerable.

Communities here are still grappling with the aftermath of the devastating 2023 wildfire season. Many parts of the watershed are still experiencing severe drought conditions, and in some cases are also now under flood watch at the same time.

Rivershed's board member from the Nechako region, Wayne Salewski, has stressed that ongoing drought and devastating wildfires have dried out critically important salmon streams across the region that are crucial to salmon recovery efforts.

We know that these extreme weather events are not anomalies and can be expected to happen more frequently with climate change.

I'll pass the rest of the time over to Justine.

Ms. Justine Nelson (Executive Director, Rivershed Society of British Columbia): Thank you, Miki.

Rivershed actively participates in the BC Watershed Security Coalition in advocating a B.C. watershed security fund. The B.C.-First Nations Water Table announced the co-development of the B.C. watershed security strategy and fund in March 2023, with an initial investment of $100 million.

This was a great start, but a $100-million endowment fund will only generate $5 million a year for projects. That is a far cry from what is needed to safeguard B.C.'s watersheds. It needs to be at least 10 times larger.

The B.C. watershed security fund needs substantial federal support to reach its full potential and adequately address challenges faced by watersheds in B.C., including the Fraser.

We are asking this committee to recommend that the Government of Canada invest $400 million in the B.C. watershed security fund and fulfill their commitment to make a historic investment of $1 billion in the freshwater action plan.

These investments could help address immediate challenges, all while advancing climate mitigation, reconciliation and sustainable economic development.

Allocating funds after disasters happen to deal with the immediate aftermath is no longer sufficient; it's imperative to proactively address the root causes before our watersheds experience levels of drought and habitat loss they cannot recover from.

This proactive approach is still possible in the Fraser watershed. The B.C. watershed security fund presents an opportunity to proactively address disasters and break the cycle of merely responding to them. It will allow us to get ahead of crises and invest in resilience and prevention.

The Fraser watershed underscores the urgency of this shift and a move from reactive to proactive, safeguarding our ecosystems, communities and economies for the long term.

Thank you.

● (1555)

The Chair: Thank you very much.

We'll go to Mr. Leslie to kick off the six-minute round.

Mr. Branden Leslie: Thank you, Mr. Chair. Thank you for your testimony, Mr. Weir.

I understand that recreational fisheries actually contribute more to Canada's GDP than our commercial fishery, obviously providing a lot of tourism dollars in rural communities across Canada. I'd like you to elaborate on what the biggest challenge is that is facing our recreational fisheries at this point in time.

Mr. Adam Weir: That's a great question.

There are unfortunately many challenges, like those we just discussed in terms of aquatic habitat. The declines in quality and health of the aquatic habitat are obviously major challenges, but some of the key themes in my presentation earlier really focused on aquatic invasive species and looking at prevention and early detection. Dams and barriers to provide for better habitat connectivity is obviously a big one too, and in general, research, monitoring and looking at other stressors related to fish habitat are as well.

Mr. Branden Leslie: Thank you, Mr. Weir.

You mentioned the recreational fisheries conservation partnership program, which was spearheaded by former Conservative MP Robert Sopuck, a great Canadian. It did dramatically improve fresh water quality in a number of lakes and water bodies across Canada, including in my home province of Manitoba.

Even though this program was incredibly successful by every metric, for some reason or other a new government that came in after 2015 decided to cut this program. I'm just curious. Was the reason this program was discontinued and cut by this government ever explained to you as an organization?

Mr. Adam Weir: It wasn't explained why it was cut.

It was definitely a benefit for own Lake Ontario Atlantic salmon restoration program. It benefited a number of different angling groups and conservation organizations, including indigenous communities as well.

Mr. Branden Leslie: Obviously, the impact of that cut was that you and many other organizations you mentioned weren't able to proceed with cold-water refugia or whatever sorts of projects to enable, increase and enhance fish habitat as planned.

What has been the impact on organizations like yours in terms of those boots in the water, of actual enhancements to our fisheries? Do you recommend that the government reinstate a program of that nature?

Mr. Adam Weir: Yes. It definitely had an impact, and not just at Ontario, where we're based, but Canada-wide. We have massive declines, as I mentioned, in aquatic habitat health and quality. To reinstate something like that, especially by providing it to grassroots community initiatives and giving the shovels to the hands of the people who are on the land, is extremely meaningful. It has extremely meaningful direct connections to nature, the outdoors, aquatic habitats and Canadians in general as well.

Mr. Branden Leslie: I know you have a lot of volunteers who do these projects on the ground, but it costs money. What impact could be seen from bringing back that program or a program of that nature? It's tough to quantify, I know, but this is real environmentalism, in my view.

Mr. Adam Weir: Yes, in terms of actual numbers, it is difficult to quantify. We have 1.4 million licensed anglers in Ontario alone, who contribute $2.2 billion annually, and across Canada there are three million who contribute upwards of $19 billion annually to the economy. It's huge in terms of what anglers are spending and also in terms of what you get out of investing in fish and fish habitat. It's huge. It's almost something you can't measure.

Mr. Branden Leslie: One of the other cuts that was made—it was a little bit later and was made in 2019—was the wetland conservation program, which helped to provide funding to projects to restore and rehabilitate important wetlands that help hold water in times of floods, allowing for availability in times of drought and, obviously, improving water quality overall.

I have just a broad-based question outside of the program, although you can comment on whether or not the program would be valuable to bring back: How important would you say wetlands are to our overall ecosystem and why should government maintain the ability to work with groups like yours and others across the country to protect them?

Mr. Adam Weir: They're incredibly important. They are known as “nature's sponge”.

Also, in terms of biodiversity, the importance of wetlands cannot be overstated. That is coming not just from my background as a fisheries biologist but on multiple levels across the board. You'd be looking at the serious importance that wetlands provide to fish, wildlife, humans, Canadians—all of the above.

Mr. Branden Leslie: Yes.

You mentioned the Canada water agency and you kind of dove into some of that in your testimony. What do you feel the federal government's role and jurisdiction should be in supporting the recreational fisheries through that agency? What role should the Canada water agency have in that, recognizing that you're a provincially based organization? Do you have any specific ideas, whether it's through the Canada water agency or programs external to that, that the government should be considering and that we can add to our report to make sure we're actually providing the support that groups like yours need?

● (1600)

Mr. Adam Weir: Yes, and that's another really good question.

I think there are multiple levels there. Obviously, providing funding to boots on the ground, to grassroots community organizations and to ENGOs is going to be a huge one.

Some of the other themes that I've heard coming out through the discussions are to look at harmonizing things across the board, having accountability, having a watchdog and having better intergovernmental collaboration. This is at multiple levels too—not just within federal agencies, but with provincial agencies as well. Maybe that could have a trickle-down effect to municipalities as well in finding a common ground approach by taking all of the moving parts and making this somewhat simpler.

The Chair: Thank you very much.

We'll now go to Mr. Ali for six minutes.

Mr. Shafqat Ali (Brampton Centre, Lib.): Thank you, Mr. Chair.

Thank you to the witnesses for appearing today to share their knowledge and experience with us.

My first questions are for Mr. Schryer and Mr. Weir.

Water plays a crucial role in our ecosystems. Without clean water, habitats can be altered not just for humans but also for other species. Water policy can also play a role in protecting against invasive species such as zebra mussels.

What measures does the Ontario Federation of Anglers and Hunters believe the federal government can take to protect our water from invasive species? Once invasive species are discovered, what measures does the federal government have to protect our water resources from them?

Mr. Adam Weir: My partner is the invasive species expert, so I'll pass it over to Brook.

Mr. Brook Schryer (Assistant Coordinator, Invading Species Awareness Program, Ontario Federation of Anglers and Hunters): Thank you for having us, everybody.

I think the federal government has a key role to play in protecting our aquatic ecosystems from aquatic invasive species and terrestrial invasive species. In terms of fresh waters, the goals of the Department of Fisheries and Oceans, which is our federal entity, are preventing the introduction of aquatic invasive species, or AIS, responding rapidly to new AIS that are detected and managing the spread of present AIS.

Aquatic invasive species and terrestrial invasive species have extremely detrimental impacts across the country. Environment and Climate Change Canada estimates that 16 invasive species cost us anywhere between $13 billion to $39 billion annually. That's a huge number of taxpayers' dollars, and it's felt across the board in terms of management, response, impacts to property values, impacts to ecosystems, ecosystem services, native species and you name it.

That's what we need from the federal government. They need to be funding programs such as the DFO AIS program, which only receives approximately $10 million per year. That AIS core program is responsible for the species that are having an impact in the tens to thirties of billions of dollars every single year. It's very fundamental that we fund this type of work, especially at the federal level.

Mr. Shafqat Ali: Thank you.

Ms. Pétrin and Ms. Roy-Grégoire, thank you for your time and for being here today.

Can you tell us about the importance of climate adaptation when it comes to protecting our water resources?

[*Translation*]

Mrs. Rébecca Pétrin: Climate adaptation is very important. Climate change is causing a drastic increase in water consumption by industries, agriculture and urban centres. This has a major impact on climate change, such as snow cover in the winter. It also affects global warming and causes the water cycle to accelerate and evaporate. Basically, it has a significant impact on the amount of water available. We can see that it is declining, mostly in central Canada. In addition, during the summer, some regions in Canada, but especially in Quebec, had to deal with significant waterfalls, which led to flooding. Climate change is drying up some regions of Canada and humidifying others.

As a general rule, the amount of water available is decreasing significantly. So we have to be careful about how we manage it. In areas where there are more droughts, there are conflicts between the different uses. We have to be able to prevent these periods of water scarcity and to know, right now, how to share this resource among the different uses, in order to reduce the conflicts associated with water management.

● (1605)

[*English*]

Mr. Shafqat Ali: Thank you.

Professor Clark and Professor Pietroniro, thank you for being here today.

Can you tell us more about what your academic work on water focuses on?

Mr. Alain Pietroniro: I'm sorry, Mr. Ali. Your audio broke up when you were speaking. Could you repeat the question?

Mr. Shafqat Ali: Yes. Can you tell us more about what your academic work on water focuses on?

Mr. Alain Pietroniro: Sure. I can start and let Dr. Clark continue.

We focus mostly on environmental prediction systems. A lot of our focus here at the University of Calgary and with our colleagues across Canada is on improving the prediction systems.

I think you're aware that in the provinces and territories and at the federal level, many prediction activities go on. What we try to do is consolidate. You have the mathematical modelling and the approaches that we take and work on with provinces, territories and the federal government to develop and improve the prediction systems, both at the climate scale but also at the forecasting scale, because we have to predict at all kinds of scales in terms of time.

That's what our research focuses on. I'll let Dr. Clark continue that discussion.

The Chair: You only have about 15 seconds, Dr. Clark, but you'll be able to address this in answer to questions later on.

Prof. Martyn Clark: Yes, okay. I'll go very quickly.

In addition to what Dr. Pietroniro said, we're doing a lot of work with the United States as part of their Cooperative Institute for Research to Operations in Hydrology. That's a new $360-million cooperative institute to focus on water resources prediction.

The Chair: Thank you.

[*Translation*]

Ms. Pauzé, the floor is yours.

Ms. Monique Pauzé (Repentigny, BQ): I want to thank the witnesses, especially those who came here. They travelled a long way to see us.

Mrs. Pétrin, we have often met at parties or commemorations with other citizens' rights groups.

In your opening remarks, you talked about the Forum d'action sur l'eau du Québec.

Can you give us a little more detail on that? How does that work?

Mrs. Rébecca Pétrin: The objective of the Forum d'action sur l'eau, created by the current Quebec government, is to steer work, a bit like what we're doing today.

It includes representatives from various sectors of society. We have a representative for each of the municipal unions. We also have representatives from the departments concerned and professional organizations, including the Union des producteurs agricoles and the chambers of commerce. Forest resource organizations and industries are also represented. We also have four civil society organizations, two of which are for citizens, one for fisheries and one for salmon habitat, more specifically.

The purpose of our meetings, which are held every two months, is to determine how the new blue fund, also created by the Government of Quebec, will be granted and what the next action plan, the Plan Eau, will be. It's a matter of prioritizing the direction on water governance across the province.

Ms. Monique Pauzé: There are indeed many forums in Quebec. We've met with people who came to talk to us about watersheds.

Do you have a relationship with them as well?

Mrs. Rébecca Pétrin: We have a lot of ties with watershed organizations, which have a concerted mandate to bring together all the stakeholders in the area.

As we know, water is a multisectoral issue. So it's important for everyone to be around a table to discuss the priority directions. That way, we can decide to act together on the same action plan. If everyone works on these directions separately, we won't be able to achieve concrete results.

Ms. Monique Pauzé: Earlier you addressed the issue of conflict of use, where water is sometimes an economic resource, sometimes a common heritage.

We know that economic development leads to enormous water pollution. However, the preservation of living environments is often a priority. Water is life.

In that regard, either the legislation is non-existent or it exists, but we dare not enforce it.

What do you think of this conflict?

● (1610)

Mrs. Rébecca Pétrin: One of the points we've made to the Government of Quebec is the importance of collecting more data on water use in Quebec, as is the case in most countries. The Minister of the Environment would then have the figures needed to determine more easily who he could require to reduce water consumption in the event of a water shortage.

For example, if it could be predicted that some regions of Canada would experience a drought next summer, it could also be predicted that there would be a water shortage. What we don't want is for the cities downstream of the waterways to experience water stress. You have to go all the way up the water basin to determine who are the heavy water users who are able to reduce their water consumption to ensure water supply for the cities downstream and who are suffering the consequences of water contamination and water shortages.

Ms. Monique Pauzé: Since you're talking about what happens upstream, I'd like to take this opportunity to mention the Chalk River landfill, which is a sort of open-pit dump. I'm sure you've considered the fact that nuclear waste is buried so close to a waterway, a very important issue for Quebec. It's upstream of the St. Lawrence River and major cities where millions of people go to get their drinking water.

Have you determined the consequences of a spill, of contamination?

We know very well that it will be impossible to warn the public. They will consume the water before they can be warned not to drink it because it's contaminated.

I'm sure you've given that some thought.

Mrs. Rébecca Pétrin: We've thought about that. In fact, we've been thinking about it for a long time. The Ottawa River, Lac des Deux Montagnes and the St. Lawrence River provide drinking water to more than three million people in Quebec alone. That's not counting the city of Ottawa.

A few years ago, Quebec decided to close the door to hydrocarbons and the pipeline crossing the Ottawa River. Quebec determined that, in the event of a spill and contamination in the Ottawa River, no action plan would be sufficient to address the problems caused by contamination of drinking water in a place with such a large population.

The dump at Chalk River is actually worse. Decontamination is possible in the case of hydrocarbons, but contamination caused by radioactive material is irreversible. It spreads into the biotope. That would really be a disaster. So we're strongly opposed to this project. We believe there should have been a much more serious assessment of alternative scenarios. This is far from the best scenario that could have been designed for Canada.

Ms. Monique Pauzé: In your notes, you also talk about encouraging political representation in public consultations. I'm making a connection here with Chalk River and the fact that elected officials often do not assume their responsibilities. We therefore need advocacy organizations to ensure that we influence decisions.

What do you think?

Mrs. Rébecca Pétrin: It's very important to mention that, as far as the Government of Canada is concerned, organizations like ours are very involved in the democratic process through the Impact Assessment Agency of Canada. They provide us with funding for each of our participations. When our projects go through Transport Canada or the Canadian Nuclear Safety Commission, we are not entitled to funding because they are not subject to the Impact Assessment Agency of Canada.

The Chair: Thank you. That's a good point. What you're talking about here is a significant discrepancy.

Ms. Collins, you have the floor.

[*English*]

Ms. Laurel Collins (Victoria, NDP): Thank you, Mr. Chair.

Thank you to all the witnesses for coming today. We appreciate your testimony.

My first questions are for Ms. Nelson.

I'm a member of Parliament from British Columbia. We have witnessed extreme flooding, droughts, wild fires, atmospheric rivers and heat domes, which have resulted in the tragic loss of hundreds of lives. Right now in B.C., there are areas that have been experiencing multi-year droughts and other areas that have been evacuated for flooding, simultaneously.

Can you tell us more about some of the initiatives you mentioned when it comes to prevention and building resilience?

Ms. Justine Nelson: Absolutely. Thank you for the question.

As mentioned, we're engaged with the BC Watershed Security Coalition, which is working to create a sustainable watershed security fund because healthy, resilient watersheds mean more clean drinking water, thriving fish populations and strong local economies. You'll be hearing from the coalition directly in the next hour of the meeting.

Two programs of Rivershed that respond to climate and other impacts on the Fraser are our foodlands program and the watershed CPR dashboard.

Our foodlands program fosters ecosystem health and strengthens climate resilience through collaborative efforts within the Fraser watershed. It brings together first nations communities, agricultural landholders and other stakeholders to create restoric corridors on privately held land throughout the Fraser watershed. This collaborative approach integrates traditional knowledge and language, emphasizing the importance of first nations stewardship and habitat restoration and resilience building.

Our other project, the watershed CPR dashboard, visually represents protection and restoration efforts across the Fraser watershed. It facilitates collaboration among stakeholders, amplifies resilience-building efforts and encourages public support and capital investment for a resilient Fraser watershed.

Both of these programs foster ecosystem health, support stewardship efforts and build community resilience in response to climate change impacts. They are only two programs amongst many that are happening across the watershed and throughout B.C. that are working at preventive measures here.

Thank you.

● (1615)

Ms. Laurel Collins: We know that watershed governance is municipal, regional, provincial and federal. First nations, Inuit and Métis governance has jurisdiction over water as well.

Can you talk a bit about how the work you do intersects with all of those, and what you see as a path forward to make sure we have coherence in our watershed policies?

Ms. Justine Nelson: We work to bring people together. That's what our position as a non-profit is.

Through programs like the foodlands corridor restoration and the watershed CPR dashboard, we're working to bring together the people working on protection and restoration efforts. While we have programs that are directly implementing restoration, most of the actual on-the-ground work is happening through other collaborators. That's what we say our role is: We're the people who connect everyone to work towards these efforts.

I think that's very important when you're working towards something of such a large scale and with so many diverse actors, as you mentioned.

Ms. Laurel Collins: Thanks so much.

I'm curious and would love to hear from both of you from the Rivershed Society of B.C.

What are some essential components you want to see to make the Canada water agency successful and the Canada Water Act more effective at protecting our watersheds?

Ms. Justine Nelson: As a non-profit working throughout such a large watershed, as you mentioned, we know that responsibility for fresh water is shared among many levels of government. I know there are more than 20 federal departments and agencies with responsibility for fresh water, which makes it very difficult to get to the bottom of an issue, especially for a small non-profit.

We support the idea of effective coordination through an agency like the Canada water agency. However, we believe it must be done in collaboration with first nations.

Ms. Laurel Collins: Thanks so much.

I'll ask Mr. Weir and Mr. Schryer my last question of this round.

In terms of the impacts of the climate crisis on anglers, fish stocks and invasive species, what have you been seeing?

Mr. Adam Weir: It's a good question and a difficult one to answer. There are a lot of uncertainties and unknowns with respect to climate change.

However, for the most part, on a personal and professional level, I don't see a lot of good things happening, especially for the cold-water, sensitive and more vulnerable fish species that come to mind. We're seeing it now.

There are a lot of good studies out there, particularly in Ontario in Algonquin Provincial Park. The climate change trends internationally and on a smaller scale are the same as those we see in Algonquin Provincial Park. When you look at brook trout and lake trout populations at risk there, you see a major threat.

In terms of aquatic invasive species, there are obviously some concerns there too.

Mr. Brook Schryer: Thanks for the question.

In terms of aquatic invasive species, what we've seen historically is that with our colder climate, we've been able to keep various species at bay. Their climactic tolerances haven't been able to withstand our colder temperatures. With climate change, we're seeing species being able to overwinter, which we did not see historically.

We were hoping for a cold winter to potentially eradicate a new species discovered for the first time in North America, in Ontario. It is the marbled crayfish, which is a species first discovered in Germany. It reproduces asexually. They will have a devastating impact on our native crayfish species and fresh fisheries, as well as many other impacts.

● (1620)

The Chair: Thank you. It sounds fascinating, but we'll have to stop there.

We'll go to the second round. To ensure we make good time, I am reducing the questioning by 40%.

Mr. Deltell, you have three minutes in this round.

[*Translation*]

Mr. Gérard Deltell: Thank you, Mr. Chair.

Welcome to your parliament, ladies and gentlemen.

My questions are for Mrs. Pétrin and Ms. Roy-Grégoire.

It's wonderful to hear what you have to say, and I'm quite pleased with your input. Before I get to my questions, I want to point out something you mentioned, the disastrous situation happening in Kanesatake. It brings to mind the grand chief's appearance before the committee. I want to recognize his dignity and courage in dealing with the situation, which not only is alarming for his community, but also is impacting many people in the area. This isn't an indigenous issue. It's a public health issue. It concerns all of us, so thank you for mentioning it.

In your presentation, you talked about how cities tend to shift responsibility for problems onto the provinces, which shift responsibility onto the federal government, which passes the buck in turn.

Can you give us an example of something that's working? In terms of effective, encroachment-free, relationships between municipalities, provinces and the federal government, is there a model we can look to?

Mrs. Rébecca Pétrin: That's a trick question, Mr. Deltell.

A lot of models are working, particularly those used by municipal and provincial governments, since they work together on a more regular basis. Quebec adopted a drinking water conservation strategy, the *Stratégie québécoise d'économie d'eau potable*. We do a lot of work under that legislation, in particular. First, municipalities were given the responsibility of implementing the strategy. The province collected the data, which were then shared with all users. From that point on, the water action forum began putting action plans in place.

When a strategy is developed alongside the other levels of government and everyone agrees on the objectives, all the parties work in co-operation and things go smoothly. I should say that, for the past two years, we've been working towards these objectives with the government and municipalities. It has led to green infrastructure projects such as efforts to reduce the amount of water in the sewer system. It has also led to additional investments, so that municipalities could upgrade public infrastructure and reduce water supply losses.

As soon as provinces and municipalities start working towards the same priorities, funding gets allocated and solutions can be implemented.

Mr. Gérard Deltell: You pointed out that it's a local issue, first and foremost. Yes, we agree that there is water everywhere, but the focus has to be on how it's used at the local level.

Politically speaking, municipalities are the first responders. Next, they look to the provinces for a general framework. As you know, Quebec's territory is large, and Canada's, even larger. Geographically, they have different needs.

How could the federal government really play an effective role in addressing the problems that municipalities and provinces run into?

The Chair: Mrs. Pétrin, kindly keep your answer brief.

Mrs. Rébecca Pétrin: It needs to set clear and specific objectives for the entire country. The provinces could then target those objectives. The federal government should also set up a program to monitor progress towards the targets and objectives.

The Chair: Thank you for being so concise.

Mr. Longfield, you may go ahead. You have three minutes.

[*English*]

Mr. Lloyd Longfield (Guelph, Lib.): Thank you, Chair.

Thank you to all the witnesses.

I'm going to direct my questions to Dr. Clark and Dr. Pietroniro.

When we look at the modelling, it's something the Canada water agency, as you mentioned, could be involved with. In Calgary in particular, they are getting water from the Bow River, which is relying on glaciers, and the glaciers are receding. We have droughts in southern Alberta. We have the North Saskatchewan River and the South Saskatchewan River going into Lake Manitoba and Lake Winnipeg, which then have hydroelectric dams, which also need water. We need water on the Prairies for food. We need it for municipalities. We need water for hydroelectricity. All of those are really under threat.

When we look at water itself, we have the surface water, either flowing or standing. We're familiar with lakes and rivers and streams. We also have groundwater below us, which is where Guelph draws its water from, which we don't see. We also have atmospheric water. When you're modelling and looking at the changes in the atmosphere and the clouds and rainfall patterns, you're dealing with a really complicated situation. It's not just rivers and streams.

Could you comment on the complexity and the need for science to be connected on this across Canada as well as internationally?

Prof. Martyn Clark: Maybe I can start.

Thank you. That's a very good question.

You're absolutely right that the complexity is enormous. The complexity we have to deal with, especially in a changing climate, makes it really impossible for a single modelling group to make substantial progress on the problem. What we're seeing across Canada is that the only way we can develop the next generation of protection capabilities that are needed is to pull resources, to combine resources and to build our models so that different groups are interoperable with each other so we can really address the challenges at hand. Those include collaboration across the provinces and territories with the federal government, with academia, with the private sector and then also internationally. It's a very big challenge.

I'll let Dr. Pietroniro add to that as well.

● (1625)

Mr. Alain Pietroniro: Just to be clear, what we're proposing here is really a national framework to bring the academic communities, the provinces, territories and the federal government and even municipalities and the private sector together to develop systems that can be applied for any jurisdiction, so it's really a national approach.

Mr. Lloyd Longfield: I hope we're also including traditional knowledge from indigenous sources in those discussions.

Mr. Alain Pietroniro: We are, and in the briefing you'll see that.

Mr. Lloyd Longfield: Thank you. I wish I had more time, but I don't.

I'll go over to you, Chair.

The Chair: Yes, it's pretty much up. I'm sorry.

[*Translation*]

It is now over to Ms. Pauzé for a minute and a half.

Ms. Monique Pauzé: That's not very much, Mr. Chair.

I want to revisit the Chalk River site, because it really worries me, especially as a Montrealer. I don't want to drink contaminated water. The Liberal government approved the project, despite the objections of the mayors of 40 municipalities in Ontario and Quebec, including Montreal and Gatineau.

How could the government go against the will of the municipalities and indigenous communities by building a nuclear waste dump in Chalk River?

Mrs. Rébecca Pétrin: Quebec's waterways clearly haven't been given sufficient protection rights, so they aren't respected. Exposing a waterway to so much potential pollution violates the principles of prevention and conservation, so I can't understand it, myself.

Ms. Monique Pauzé: It's funny you should bring up the matter of rights. The committee talked about that on Tuesday. One witness said that no matter how many rights are conferred, they aren't respected if obligations and penalties aren't imposed. For instance, international rights are in place to prevent genocide, and you can see what still goes on. I don't think it's about granting more rights.

What else can we do?

The Chair: Please answer quickly.

Mrs. Rébecca Pétrin: Society should call on the Government of Canada to scrap the project. It's dangerous to the health of Canadians.

[*English*]

The Chair: Go ahead, Ms. Collins.

Ms. Laurel Collins: Thank you, Mr. Chair.

Again to the Rivershed Society, one thing you mentioned in your opening statement was that the funding was disproportionately spent elsewhere, rather than in British Columbia. Given the impacts on watersheds from our changing climate that B.C. has seen, could you talk a little bit about the need for increased funding and the need for B.C. to get its fair share of the funding that is being allocated?

Ms. Justine Nelson: Yes, absolutely. I think the B.C. salmon restoration and innovation fund is a really good example of that. The recent open application period for a $250-million fund had more than a billion dollars in applications, and of those applications, more than 60% were for restoration projects. I think that clearly demonstrates the need for funding within B.C. for this sort of work.

Thank you.

Ms. Laurel Collins: Thanks so much.

You talked a little bit about the need for collaboration with indigenous communities. Can you speak more to what the federal government could be doing to support organizations like yours to make sure that there is collaboration with indigenous peoples on these issues?

Ms. Justine Nelson: I think one of the biggest things when there are funding opportunities is providing funding for relationship building in these sorts of situations. Relationship building takes time, and a lot of time. Funding sources do not allow for that sort of deep relationship building to happen, so when we're looking at collaboration, that is desperately needed.

The Chair: Thank you.

Mr. Kram, you have three minutes.

Mr. Michael Kram (Regina—Wascana, CPC): Thank you very much, Mr. Chair.

I don't have a lot of time, so I'll cut to the chase right away.

To the witnesses from the University of Calgary, you talked about a fragmented prediction landscape for floods in this country and the need for a Canadian institute for environmental predictions. Could you explain for the committee who is doing the predictions now in this country for flood predictions in this fragmented landscape?

● (1630)

Mr. Alain Pietroniro: Chair, I can take that question.

Right now it's largely the responsibility of the provincial governments. Some municipal governments also give flood forecasting, and there is a national flood guidance system that's been recently developed by ECCC. All those agencies are talking together, and things are moving forward.

Where we think we can make more advancement is really on the research to operations side. The whole idea of this co-operative institute is to allow an ecosystem for research that allows interoperability between systems and allows people to take advantage of things like AI so that the provinces can make their systems better. At the federal level they can make their systems better, and the municipalities can as well. It's all a shared platform.

Mr. Michael Kram: Thank you.

Is the Canadian institute of environmental predictions going to be in addition to these 10 provincial bodies that are doing these predictions, or would the need for the 10 provincial bodies go away?

Mr. Alain Pietroniro: No. The idea here is to maintain the jurisdiction. This is a research to operations paradigm. It's the way to get research.

It's important to understand that all of these agencies that are doing predictions, whether it's flood predictions or water supply predictions, are always very busy. To actually undertake research to make their systems better is often very difficult, and it becomes fragmented.

The idea here is to really try to bring it all together into a cohesive national system, but every province would run their own forecasting system. The federal government and ECCC would continue doing the same things.

Mr. Michael Kram: I'm going to assume the $50 million that you mentioned in your opening statement would be new money, then, and if so, could you give us an idea of what the new money would be used for?

Mr. Alain Pietroniro: I'm going to let Dr. Clark speak to this a little bit. The focus would be on new money, but perhaps re-profiling existing money as well. There are many grants and contributions around the country that are being used now to update systems, so there's a possibility to re-profile existing money and add some new money into the system.

Part of the motivation here is that we're dealing with a bit of a crisis right now with climate change and everything we're seeing with wildfires, floods, and [*Inaudible—Editor*]

[*Translation*]

The Chair: Thank you.

We now go to Mrs. Chatel for three minutes.

Mrs. Sophie Chatel (Pontiac, Lib.): Thank you.

Thank you for being here, Mrs. Pétrin.

I, too, have concerns about the situation in Chalk River. My riding is just across the river, in Quebec. The municipality of Rapides-des-Joachims is nearby.

I very much share your frustration over the lack of alternative solutions. Certainly, the independent commission spent years hearing from experts from all over Canada and other parts of the world. It decided that the proposal, the only one submitted, was safe for the environment and human life. However, there wasn't an opportunity to conduct consultations on whether more suitable solutions existed.

If the radioactive waste is moved further away from the river, I know that it could seep into the groundwater, whereas the site that's been chosen is located on a bedrock ridge. Nevertheless, the primary concern people in my riding have is that the waste is currently on the shores of the river, in old buildings that housed nuclear reactors. All of those buildings—which are something to see if you've never been there—have to be demolished and the waste has to be secured.

What will happen if the project doesn't go ahead? Will the waste stay where it is, on the shores of the river, in a site vulnerable to forest fires, tornadoes and earthquakes? What's the answer? When you say that the project mustn't go ahead, I hope you aren't suggesting that the waste be left where it is.

I know that a protective membrane is in place, but it isn't a permanent solution. That's what people are worried about.

Mrs. Rébecca Pétrin: We certainly aren't saying that the waste should be left as it is. I wouldn't want to speak for the experts, who could probably propose some temporary solutions. I'm not an expert on the subject.

One thing is certain: we've been following citizens groups and experts in civil society who have examined the project. As soon as discussion of the project began, they were already calling for different scenarios to be assessed.

The problem is that this is the 11th hour. The situation is urgent, so the project was given the go-ahead. It's important to bear in mind, though, that citizens were already alarmed by the lack of alternatives when the discussions began.

I think it's necessary to reconsider how the Canadian Nuclear Safety Commission does things, because the public wasn't adequately consulted at the front end. As you said, the only proposal that was examined was approved. How is it that there is no roof? How is it that all the rainwater will have to be treated?

A lot of problems were flagged at the beginning, but no solutions were identified.

● (1635)

The Chair: Thank you.

That concludes our time with the first panel.

I would again like to thank the witnesses for being here, both virtually and in person. It was a very informative discussion.

We will break for five minutes to bring in the second panel.

● (1635)

_____(Pause)_____

● (1640)

[*English*]

The Chair: Colleagues, we're back in business here.

We have with us Dr. John Pomeroy, distinguished professor and Canada research chair in water resources and climate change.

We also have, from the B.C. Watershed Security Coalition, Coree Tull, co-chair, and from the Canadian Nuclear Association, Jill Baker and Sorouche Mirmiran.

[*Translation*]

From the Fédération de l'UPA Outaouais-Laurentides, we have Maria José Maezo joining us.

Without further ado, I will ask Professor Pomeroy to give his opening statement.

[*English*]

Go ahead, Dr. Pomeroy.

Dr. John Pomeroy (Distinguished Professor and Canada Research Chair, University of Saskatchewan, As an Individual): Thank you very much.

It's an honour to be here as a University of Saskatchewan professor who does his work on Treaty 6 and Treaty 7 lands in the home of the Métis. We honour them.

I'm here representing the knowledge of over 200 professors at 23 universities across Canada, over 500 collaborators, and over 2,000 researchers and students who are finding solutions to water problems through their work in the Global Water Futures Programme, a federally funded study. It's the largest in the world led by universities, the most scientifically productive in the world, and it's in Canada. This is funded by the Canada first research excellence fund. It is ramping up right now. We are carrying on the observations of this with the global water futures observatories project, funded partially by the Canada Foundation for Innovation.

I want to note the contributions to modelling that professors Clark and Pietroniro made. They were key leads in the modelling program with the Global Water Futures Programme and made tremendous advances that are being used around the world in water and in environmental prediction.

I want to talk a bit about history. I was an Environment Canada scientist in the previous century. In 1996 I was asked to work with other scientists in the department to summarize the impacts of climate change on fresh water in Canada—exactly the question I've been asked to address here.

I found my slides the other day. They're kind of old-fashioned. Everything we mentioned in there had not happened yet, and everything we mentioned in there is now happening: the floods, the droughts being worse, the loss of glaciers, the loss of snowpack, lake ice, algae blooms, water contamination, and other problems. We're seeing it all. I guess the lesson from that is that science can be helpful.

Over 25 years ago, there was a good appreciation of what was coming if we didn't take action. Now we have to take action. The year 2023 was the hottest year on the planet since instrumented records began—and possibly in 120,000 years, which is most of humanity's history.

In Canada, this melted show and ice thawed permafrost, burned our forests and intensified the flow of water through the landscape. Floods were worse and droughts were worse. They were outside of anything in which the species in our country and in our natural environment have ever evolved. This is hurtling us into a dangerous and unfamiliar world where our experience and traditional approaches no longer provide adequate guidance.

Canada has an unprecedented number of water-related disasters. By my estimates, I'd say that they've exceeded $40 billion in costs since the turn of the century. Even worse, I say that those water disasters have broken the trust that Canadians once had in their government to manage their water competently.

There is international concern about these changes. The United Nations has instituted an international year of glaciers' preservation, which looks at the loss of snow and ice around the world. This is, of course, defining for Canadian water.

In 2023, the snow drought was the prompt to the wildfires, the prairie drought, the hydroelectric shortages, and now the depleted groundwater and the restricted water for municipalities that have been endemic across the country. It's from B.C. to Labrador, from the Prairies up into the Arctic.

The drought situation this year is looking dire. I operate observation stations in the Canadian Rockies. We have a snowpack that's 70% abnormal. Last year, we had record glacier melt. Our groundwater levels are at record low levels right now. Water reservoirs in the Rockies are five metres below where they should be at this time of year, and some reservoirs are so low that municipalities can't withdraw water through their pipes and have to get water trucked in to southern Alberta.

Lake Diefenbaker in southern Saskatchewan, which provides water for 70% of the population, received only 28% of its normal inflows last year, something absolutely unprecedented.

We need to pick up our game on fresh water. We need leadership on how to deal with these climate change and drought impacts.

Here's a list of things to consider:

We need national coordination, new investment, and novel technology—such as the environmental prediction mentioned—to help predict floods, water quality and droughts and to identify properties and infrastructure at risk in the future.

We need to identify the vulnerabilities of communities and focus on mitigating vulnerability, not just flood damages. It's not just money; it's people's lives.

● (1645)

We need to integrate our planning on river basins—something we don't do in this country—to help with disaster mitigation and adaptation, flood and drought recovery, pollution abatement, transboundary allocations, our American water relationships, and the use of natural infrastructure, such as lakes, wetlands and forests.

We need the leading-edge research and science capacity to inform wise water decisions and build state-of-the-art water prediction management systems to support our decision-making so we know in advance what's going to be happening.

The Chair: Thank you.

We're going to have to stop there, but there will be many questions, I'm sure, and you'll be able to get more information into the discussion.

We'll go to Ms. Tull, please, for five minutes.

Ms. Coree Tull (Co-Chair, BC Watershed Security Coalition): Hello. Good afternoon.

Thank you for the opportunity to speak today as we discuss the fresh water study in the face of climate change.

My name's Coree Tull. I'm the co-chair of the BC Watershed Security Coalition. We're a non-partisan coalition representing 50 organizations and 255,000 British Columbians from all corners of the province.

Across Canada, healthy watersheds are vital to human health, security, prosperity and reconciliation.

Today I join you from the China Creek urban watershed, situated on the unceded traditional territory of the Musqueam, Squamish and Tsleil Waututh Coast Salish people.

The climate crisis is a water crisis. From coast to coast to coast, communities are on the front line of a relentless cycle of climate disasters. From droughts to fires to floods, climate change demands urgent attention, action and leadership to get ahead of these crises.

The rivers and lakes of British Columbia are essential to our local economies, the production of food, clean drinking water, wild salmon and the practice of indigenous rights and culture. Watersheds are nature's infrastructure.

However, B.C.'s watersheds have been weakened by the impact of human activities on the land, leaving us much more vulnerable to the climate-fuelled floods, droughts and fires that we're seeing.

Currently, B.C. is experiencing a multi-year drought. This has been characterized as a “sleeping giant” disaster by the B.C. Minister of Emergency Management. Communities in every corner of the province were impacted by the drought and subsequent wildfires this past summer, with eight river basins still in stage 4 or stage 5 drought. That means adverse impacts to socio-economic or ecosystem values are likely or almost certain.

The province's climate risk assessment has estimated that economic losses will exceed $1 billion annually from long-term water shortages.

January has exhibited unusually warm weather across the province, marked by minimal rainfall in certain regions and excessive precipitation that would typically occur as snow in others. This is being seen in parts of southern B.C. right now, with rising flood threats and local states of emergency. The current winter snowpack, which is averaging about 56% here for the province due to this low snowfall, is signalling another hard year of floods, droughts and wildfires, with even greater impacts than we've seen to this date.

For the second year in a row, Canada has exceeded the $3-billion mark in insured damages from natural disasters. Climate costs will continue to escalate unless we change our approach.

The International Institute for Sustainable Development notes that natural infrastructure like forests and wetlands, which are a critical feature of our watersheds, offers services at a lower cost than traditional built infrastructure, and these natural defences are not only cheaper to build but also more cost-effective to maintain, and they appreciate over time.

The Canadian Climate Institute estimates that each dollar spent on adaptation measures can save $13 to $15, factoring in both direct and indirect economy-wide benefits.

There are no more excuses. Climate change is here. We must make an urgent shift from reactive crisis management to proactive investment.

British Columbians and all Canadians need to see bold and decisive action from their federal government. They need to see investments in the security of their watersheds as a central infrastructure that will keep their communities safe.

Today I'm asking the committee to recommend in your final report that the federal government invest $400 million in the B.C. watershed security fund, which is being co-developed with first nations.

This investment is crucial to ensure long-term impacts on the ground and support collaborative partnerships for better decision-making. It also demonstrates a new way of working with first nations that can be a model for the rest of the country.

I also ask that you recommend that the federal government fulfill their commitment to invest $1 billion in the freshwater action plan.

Federal reporting demonstrates a long-standing disparity in investment in fresh water, with British Columbia receiving zero direct funding under various fresh water action plans in the last two decades. This discrepancy was underscored by the recent funding announcement under the freshwater action plan, which again left B.C. off the list of funding priorities.

It is time to address these regional inequities.

Healthy watersheds not only reduce risks to community health and security but also mitigate climate impacts on economic sectors like agriculture, fresh water, tourism, breweries, pulp and paper, and oil and gas.

In addition, investing in fresh water and watersheds creates vital local employment opportunities with local economic benefits. Recent economic studies show that B.C.'s watershed sector sustains over 47,000 jobs and contributes $5 billion to GDP through watershed work such as restoration, monitoring, technology and urban and industrial water management.

I commend this committee for studying such a crucial matter. Prioritizing and making these critical investments will build resilience in communities and proactively get ahead of disasters before they happen.

I look forward to continuing this conversation with you and answering any questions you may have.

Thank you.

● (1650)

The Chair: Thank you, Ms. Tull.

We'll go to Jill Baker from the Canadian Nuclear Association.

Ms. Jill Baker (Vice-President, Regulatory Affairs, Policy and Corporate Events, Canadian Nuclear Association): Thank you, Chair and members of the committee, for your invitation to appear and speak today. I'd like to recognize that I'm working today on the traditional unceded territory of the Algonquin nation.

My name is Jill Baker. I am the vice-president of regulatory affairs and policy at the Canadian Nuclear Association, also known as the CNA. With me today is our regulatory affairs director, Sorouche Mirmiran, who will be joining the discussion if necessary during the Q and A portion of the meeting.

Just so you know, the CNA represents the clean nuclear energy companies that are responsible for nuclear energy production, mostly in Ontario and New Brunswick, as well as the supply chain that supports the industry. We have approximately 100 members across Canada. We also represent the Canadian uranium fuel cycle, including world-class and state-of-the-art uranium producers in Saskatchewan and processing and fuel fabrication facilities in Ontario.

The association also represents industries that produce and use important nuclear substances for industrial purposes across Canada as well as in the production and use of life-saving medical isotopes. Our association aims to promote Canada's worldwide leadership in both nuclear science and technology innovations. Currently, the industry employs over 76,000 people in direct and indirect jobs across the sector in Canada, and this is growing.

We want to take the opportunity today to draw your attention to the importance of the nuclear sector in climate change and to let you know what our position is, at a very high level, on the importance of water.

The study of fresh water and the impacts of climate change on this important resource being undertaken by the committee is both very timely and important. The sustainable protection of Canada's freshwater resources is a duty shared by all of us—individuals, governments and associations such as ours. Our members are committed to the health of the public and the protection of the environment, including the sustainable protection of fresh waters in the face of climate change and the stresses it imposes on the environment.

Today I would like to very briefly share with you where the nuclear industry and the members of the CNA stand on fresh water and sustainability.

The Canadian nuclear industry is federally regulated by our life-cycle regulator, the Canadian Nuclear Safety Commission, as well as Fisheries and Oceans Canada and Environment and Climate Change Canada. We commit to excellence by meeting or exceeding all relevant legal requirements to which we subscribe. We hold ourselves accountable to prevent pollution throughout the robust management of emissions and effluents. The industry's commitment to environmental protection includes the application of sustainability principles and the participation and engagement of indigenous communities.

Nuclear energy plays a critical role on our path to net zero and to fight climate change both domestically and internationally around the world. At COP28 last December, nuclear energy was recognized for its key role in reaching net zero by the U.S., Canada and multiple other countries. Nuclear energy is recognized by this federal government as part of the pathway to net zero in Canada. We must do what we can to ensure that Canada demonstrates leadership toward this pathway.

Furthermore, nuclear energy was recognized as a source of clean dispatchable baseload power, with benefits for energy security and for achieving the United Nations sustainable development goal number seven, which is affordable and clean energy. Canada is a top-tier nation in both environmental protection and nuclear energy, and we need to demonstrate leadership towards this path in Canada and across the globe by the following actions.

Canada can do so by implementing policies that support deployment of nuclear energy and other large-scale sustainable solutions, such as the reduction of overlap and duplication amongst provincial and federal entities and their policies and regulations. Across the globe, leadership towards a pathway to net zero could be achieved by delivering energy security and affordable clean energy to reduce the geopolitical pressures we have been seeing in the last two years.

We advocate that this committee continue its work to support Canada in protecting fresh water in a sustainable manner while remaining cognizant of the important role that nuclear plays in our shared commitment to fight climate change and our pathway to net zero. Beyond the objectives of this committee's focus today, we advocate that you and all interested parties work together to develop and deploy frameworks and solutions that will help individuals and organizations that are capable of addressing the challenges brought by climate change on not only fresh water but also our natural systems and our healthy ecosystem.

With that, the CNA and its members would like to thank you for your time. We would be pleased to answer any questions you may have.

● (1655)

The Chair: Thank you very much, Ms. Baker.

We'll go to Madam Maezo.

[*Translation*]

Ms. Maria José Maezo (Agri-Environmental Consultant, Fédération de l'UPA Outaouais-Laurentides): Good afternoon. My name is Maria José Maezo, and I am an agri-environmental consultant at Fédération de l'UPA Outaouais-Laurentides. I am here on behalf of the farmers in my region, which encompasses the Outaouais, the Laurentians, Montreal and Laval. The region is home to 2,500 farms, 3,500 farmers and 3.3 million residents.

Even though farmers represent less than 0.1% of the population, they shoulder significant environmental responsibilities. Agriculture is often singled out as a source of pollution, and farmers are required to implement many solutions to address environmental concerns. I am here today to talk about what farmers need in terms of production and support. This year marks the 100th anniversary of the Union des producteurs agricoles. A demonstration was held under the slogan "we are central to the solution". Farmers are ready to contribute to the solutions, but they need support, especially on the ground.

A very clear message I've heard today is that the multiple levels of government make the regulatory landscape much more complicated. It's harder and harder for farmers on the ground to deal with the various levels of government in order to comply with all the rules and regulations that apply to them. It is also harder for us to advise and support them in implementing solutions, in accordance with current, but ever-changing, regulations.

The first thing farmers want Canada to do is this: do everything possible to prioritize the protection of farmland. Our land, in particular, is quite fragmented and very much impacted by urban development as well as commercial and industrial development. That development affects water quality and, thus, access to clean water.

For example, on the island of Laval, it's impossible in certain areas to access the river. The groundwater isn't good enough, so farmers have to rely on the water supply system for their irrigation needs, which is very expensive. The situation in Kanesatake came up earlier. The community is in a vibrant agricultural area, in Oka. The contaminated site impacts water downstream [*Technical difficulty—Editor*].

The Chair: Pardon me, Ms. Maezo, but we just lost you.

The connection seems to be back.

Please carry on.

Ms. Maria José Maezo: I think I may have moved. Sorry about that.

All non-agricultural development in agricultural areas jeopardizes not only water quality, but also access to water. Urban development projects can affect groundwater and can cause water supply issues for local farmers. Currently, our area is home to numerous mineral claims, and farmers are very concerned. They have spoken out against any mining development in agricultural areas.

Furthermore, farmers are asking for more professional support and funding to make the requested changes on the ground. They are being asked to change their practices and to implement a number of solutions to improve soil conservation and reduce pesticide use, among other things. Multiple studies have shown that these measures help to reduce greenhouse gas emissions. For example, healthier soil leads to better water retention, which in turn helps to prevent floods and reduce erosion.

However, these changes cost money and require specialized equipment. This can have a negative impact on yields in the short term, despite the potential long-term benefits. That is why farmers need financial help and technical support on the ground.

● (1700)

The Chair: Thank you very much, Ms. Maezo.

We will now begin the first round of questions.

Mr. Deltell, you have the floor.

Mr. Gérard Deltell: Thank you very much, Mr. Chair.

Ladies and gentlemen, I welcome you to your Parliament.

[*English*]

My first question will be for Madam Baker. It's about the nuclear issue.

[*Translation*]

Ms. Baker, earlier in the meeting, witnesses reported on the reality of the landfill at Chalk River.

I'd like your comments on this situation.

[*English*]

Ms. Jill Baker: Thank you for the question.

I'm not familiar in any level of detail with the Chalk River NSDF project, so I'd prefer not to comment on it. I don't have information about it. I wasn't involved, but I will say that I understand it went through a rigorous process through the Canadian Nuclear Safety Commission as well as the Impact Assessment Agency of Canada, which conduct robust review processes.

From what I understand, the Government of Canada's decision was that there would be no significant effects as a result of the project should the company, CNL, put in place the mitigation measures that were put forward that they committed to. I also understand that there's a monitoring program that has been developed in partnership with the first nation in the region. I don't know any details about it, but I understand that they will be involved in the monitoring, which will be a transparent process.

Mr. Gérard Deltell: As you know, Canada is the second-largest country in the world. Don't you think that we can find another place instead of being close to a river?

Ms. Jill Baker: Again, I'm not part of that project. I can't comment on the process that they went through. I'm sorry.

[*Translation*]

Mr. Gérard Deltell: All right.

Mr. Chair, from our side, we don't see a problem with the development of nuclear energy. It's not the only solution, but it's one of the solutions we have to consider. I don't want to get into the debate going on in the province of Quebec: this week, the provincial parliamentary committees discussed the possibility of... I think we have to see nuclear power as part of the solution, but not as the only solution; when it comes to decarbonizing our energy, there's no magic wand.

Ms. Baker, do you feel that small molecular reactors are something that should be considered when evaluating the possibility of developing nuclear power? Are there other interesting ways of doing this?

[*English*]

Ms. Jill Baker: I'm sorry. I'm not sure that I quite understand the translation of the question.

I would say that I completely agree, and the Canadian Nuclear Association has always been asserting, that nuclear is a part of many solutions that are out there. We've never said that we are "the" solution. We definitely recognize that.

The climate crisis is one of the biggest issues facing the globe, and we are in full support of all clean technologies that need to be put forward to address that issue, of which SMRs could very much be potentially part of that solution. SMRs have the capability, from what I understand about the various technologies, to contribute to electricity, both on grid and off grid, but they're also a potential solution we're looking into—that the sector is looking into—for helping to decarbonize the very difficult parts of the economy, such as industries that rely currently on fossil fuels, and to potentially be a solution to that component of the Canadian economy that's very difficult to decarbonize.

I would ask Sorouche, my colleague, if he wants to also answer that.

● (1705)

Mr. Sorouche Mirmiran (Director, Regulatory Affairs, Canadian Nuclear Association): Thank you, Mr. Chair and parliamentarians.

Small modular reactors can produce high heat. Right now the industry relies on fossil fuels and so on. Small modular reactors or advanced reactors can produce high temperatures that can be used for industrial applications. That's one of the uses they can have, as well as producing electricity for remote sites, where right now, again, we rely on fossil fuels.

There are a number of applications that are very different from those of large water reactors. Large water reactors are very beneficial as well, but again, they have different applications.

To answer your question, yes, they do have applications for decarbonizing.

[*Translation*]

Mr. Gérard Deltell: Thank you very much.

I would now like to ask a question of Ms. Maezo, whom I welcome to our committee.

Ms. Maezo, when we talk about agriculture and your region, particularly the Montreal region, we can't overlook one of the greatest disasters Canada has ever seen, the expropriation of Mirabel farmers.

That said, earlier you mentioned that the federal government should have a better measure to protect agricultural territories.

Can you explain how the federal government can intervene in a sector that is first and foremost—as we've clearly seen, in Quebec—a provincial jurisdiction?

Ms. Maria José Maezo: I'll give you an example: the City of Mirabel's project to build a traffic circle. However, as it may encroach on federal territory, this complicates the situation and the city hasn't even tried to go any further. From what I understand, nothing is being done on this land. It's an example of land that belongs to the federal government, but has no particular vocation. Land in an agricultural zone could be used for something else if it's not being used for agriculture.

To be honest, I don't know enough about the powers you have in this area. However, in our opinion, it's really important that the federal government do something to help...

The Chair: Thank you.

Mrs. Chatel, you have the floor.

Mrs. Sophie Chatel: Thank you very much, Mr. Chair.

Ms. Baker, I know you're not an expert on the Chalk River issue. However, I would like to talk to you about a concern expressed by citizens during the consultations. In 2015, the Conservative government of the day delegated nuclear waste management to the private sector. Yet nuclear waste management is more a question of ethics and morality, which is the responsibility of the government.

Do you think we could overturn this decision and move forward to ensure the complete management of radioactive waste by the government or by one of the government agencies?

[*English*]

Ms. Jill Baker: Thank you for the question.

I'm going to ask my colleague Sorouche if he can address that one, because I don't have the history of that waste management decision. I'm not sure Sorouche does either, because he was in Europe at that time, but I'll ask him.

[*Translation*]

Mr. Sorouche Mirmiran: Hello.

Thank you for your question.

I can't say whether waste management should be in the private or public sector, as it depends on the outlook. For example, pharmacies and companies in the aviation field are mostly managed by the private sector, even though different departments are responsible for the safety aspect. The same applies to nuclear waste. Some countries have private mechanisms, others have public mechanisms and others have mixed mechanisms, i.e., private and public.

From the moment a competent regulator ensures that disposal sites are safe, it's more a question of transparency and monitoring the site over time. So it's purely a question of how these mechanisms are put in place.

● (1710)

Mrs. Sophie Chatel: Thank you very much.

Ms. Maezo, welcome to our committee. I've been impatiently looking forward to your testimony. You raised the fact that several levels of government are involved in water management and that this creates extraordinary challenges for farmers, who must interact with several levels of government and comply with different regulations.

Do you have any solutions to propose?

The Canada Water Agency has just been created, and its main mandate is to ensure better collaboration between the provinces, territories and indigenous peoples when it comes to water management.

Ms. Maria José Maezo: If there were a follow-up, it would help us a lot.

When you apply for a permit, you sometimes have to deal with the municipal and provincial levels. This agency would have to be able to put it all together and process applications on a priority basis. Some of our producers have applied for water-taking permits, to create new ponds, but they've been waiting for an answer for two years. There are always new forms to fill in and new things to add. We should set up an expressway and find solutions more easily.

Often, several regulations are a hindrance to the implementation of certain solutions; there is sometimes inconsistency between different regulations.

Mrs. Sophie Chatel: Thank you very much.

In your brief, you talked about the success of certain programs, including ALUS, which stands for Alternative Land Use Services, in the Outaouais region.

Could you briefly explain what ALUS does?

Ms. Maria José Maezo: I'm the coordinator of the ALUS program. We visit producers. We're not environmental inspectors, which makes it a little less scary for the growers who receive us on their land. We suggest different solutions depending on their needs, whether it's installing riparian buffer strips or windbreaks. We also do a lot of prairie reserves, that is to say pastures and hayfields. These are very rich environments for biodiversity and very important for water and climate change. These soils are very rich. We explain the value of all this to producers, and we give financial compensation to producers who implement measures to protect these ecosystems.

So we cultivate nature. We implement green infrastructure projects that improve biodiversity and water quality. We do this on a farm-by-farm and project-by-project basis, depending on the partnership or service needs of individual growers. We ask ourselves whether a grower's reluctance stems from a question of money, a lack of knowledge or a lack of time. We then find the right partners to help them. Sometimes we do projects on our own. Other times, we do projects with local partners.

Our goal is to offer a service tailored to each person, one at a time, in the most local way possible. In fact, ALUS communities are developed locally, one community at a time.

The Chair: Thank you.

Ms. Pauzé, you have the floor for six minutes.

Ms. Monique Pauzé: Thank you very much.

I thank all the witnesses for being here.

Ms. Maezo, we know that agriculture and climate change are directly linked to water. California, for example, will no longer be able to supply North America with fruit and vegetables. Water availability is very likely to become an issue.

Are there not major water issues that the federal government is not properly addressing?

Ms. Maria José Maezo: As far as I know, the federal government doesn't deal with the water issue in Quebec at all, or almost not at all. Water bodies are managed by the province...

Ms. Monique Pauzé: I apologize for interrupting.

With regard to water availability, I think we need to talk about infrastructure. That's where the federal government has a role to play.

Ms. Maria José Maezo: Of course, ideally the federal government could help producers install irrigation basins; it could better manage the coherence between municipal and agricultural water supplies.

In Laval, some producers are simply connected to the city's aqueduct network. The federal government could play a coordinating role in infrastructure to ensure that water system planning takes into account producers' access to water, or that infrastructure is planned so as not to affect groundwater quality.

This would be particularly necessary in the case of mines or other projects that take place on agricultural land. There are also a host of laws that could protect adjacent producers' access to groundwater.

● (1715)

Ms. Monique Pauzé: Thank you.

Since I have six minutes and I want to ask questions of three witnesses, I'll stop there.

Mr. Pomeroy, we recently learned that Canadian oil companies have been covering up the disastrous environmental impact of the tar sands industry.

As professor emeritus, could you inform the committee of the direct environmental effects of oil sands development in Canada, particularly for fresh water?

[*English*]

Dr. John Pomeroy: Of course, the oil sands are on the Athabasca River, which flows north to form the Slave River and the Great Slave Lake, and then to the Mackenzie River to the Arctic Ocean. The aquatic impacts are in that region.

The aquatic sampling program has been extensive in there. The one concern, of course, is the storage of water from the oil sands extraction process. The treatment of these ponds has been left to something in the future. It's crucial to ensure that they don't leak. Generally they don't leak, but sometimes they leak a bit. That's a great concern aquatically.

The other is the restoration of these lands. This is something that the Global Water Futures Programme did research on, working out how best to regrow the forest and reproduce the wetlands, including under drought conditions. We need deeper soils to do this. There's been tremendous expertise developed in how to restore the oil sands land to something more approximating a natural state.

The other concern you mentioned was the emissions in the atmosphere. Through airplane sampling, they picked up things that could not be picked up by existing sampling schemes on the ground. The sampling schemes need to improve for the atmosphere.

For the aquatic system, it's simpler because it's focused on the river. If we keep an eye on the river, which is being done very well, I think that can be contained, but it's crucial that a plan be developed to deal with the liquid waste from the oil sands over time, and not leave it for another half century.

[*Translation*]

Ms. Monique Pauzé: I see in the policies that they want to increase production in the oil sands. The problems involving rivers, waste and water storage will therefore be far from solved.

[*English*]

Dr. John Pomeroy: In terms of policy, this should be part of the integrated river basin management for the Mackenzie River basin. There are vast natural ecosystems downstream, and indigenous populations in a relatively lower political power jurisdiction. The Northwest Territories is not a province.

The stance of many of the indigenous people is zero tolerance for contamination of their waters. That has to be assured through transboundary agreements and through a strong Mackenzie River Basin Board that has the authority to ensure that environmental conditions downstream are being met all the time.

[*Translation*]

Ms. Monique Pauzé: Thank you.

My next questions will be for Ms. Baker.

The new Impact Assessment Act allows most nuclear projects to avoid the act, which is deplorable, given that tritium, for example, is increasingly abundant in water. The Ottawa River is contaminated by industry. Much of Canada's radioactive waste will be sent to the Chalk River landfill. Nuclear power plants on the shores of the Great Lakes also contribute to the pollution of drinking water. So there are serious risks for the population.

You mentioned earlier that you're concerned about fresh water. What do you intend to do to assess and manage this accumulation of radioactive waste in waterways?

[*English*]

The Chair: Answer very briefly, please.

● (1720)

Ms. Jill Baker: Thank you for the question, Madame Pauzé.

I think you may be misinformed. The Impact Assessment Act does capture some nuclear projects. I'm not sure what your source is there. The Impact Assessment Act captures some nuclear projects.

[*Translation*]

Ms. Monique Pauzé: This does not apply to small modular reactors, SMRs.

[*English*]

The Chair: We're going to have to go to Ms. Collins. Maybe Ms. Collins wants to pursue this—

Ms. Jill Baker: Again, with the small modular reactors, some are of a certain size. There is a limitation that they put into the regulation, called the project list. Some SMRs are actually captured by the Impact Assessment Act, depending on their size.

The Chair: Okay. Thank you.

Go ahead, Ms. Collins.

Ms. Laurel Collins: Thank you, Mr. Chair. Thank you to all the witnesses.

My first question is for Ms. Tull.

We are seeing precedent-setting droughts in British Columbia. They're impacting wild salmon populations, food security, the safety of our communities, ecosystems and local economies. Can you talk a bit about what needs to be done?

You also spoke—and we heard this from other witnesses—about how B.C. isn't getting its fair share of funding, especially when it comes to water funding. Can you talk a bit more about the regional inequities that need to be addressed?

Ms. Coree Tull: Yes. Thank you for the question.

We've pulled data that we accessed through federal reporting. We found that between 2008 and 2022, Ontario received $224 million in federal freshwater funds for the Great Lakes and Lake Simcoe protection and restoration. We saw in budget 2023 a real historic commitment of $420 million over 10 years for the Great Lakes. In a 25-year period, that's roughly $650 million in federal funds to fresh water in Ontario, which is needed. Similarly, we've seen significant investments of $62 million between 2008 and 2022 for restoration in Manitoba and another $111 million for the St. Lawrence action plan in Quebec.

However, we really haven't seen these federal funds allocated in British Columbia.

Much of the federal funding for fresh water has been allocated through agreements with these specific provinces to assure the alignment in federal and provincial funding approaches. This is really an opportunity for freshwater funding programs for provinces to be aligned with British Columbia.

We're seeing that two of B.C.'s major watersheds—the Fraser and the Mackenzie—have been named as priorities of the current federal freshwater action plan, but no funds have been committed to that.

When we look at what's currently allocated under the freshwater action plan, of the $650 million, we see that only $420 million has been allocated. That leaves less than $230 million for the rest of the country and those other priority river basins. It's just woefully inadequate as the amount that is needed to make meaningful and lasting changes to get ahead of the crises we're seeing.

Ms. Laurel Collins: That's really disappointing to hear, given that watershed health and function across B.C. are rapidly deteriorating and given the severity of the impacts of drought that we're seeing.

You spoke a little bit about the economic impacts of watersheds. Can you speak to how investing in the watershed sector as a whole contributes not only to climate resilience but also to new employment opportunities?

Talk a little bit about how this is a viable avenue for transitioning workers from traditional resource industries into a watershed workforce.

Ms. Coree Tull: Thanks for that question.

This really is an opportunity for job transition into the watershed sector. It's timely.

The working for watersheds initiative has highlighted the watershed sector's really significant role in supporting jobs. In B.C., it's more than 47,000 people annually.

There's a unique opportunity for workers in those traditional resource roles—whether that be heavy machinery, oil and gas, aquaculture or forestry—to pivot into this growing sector. Jobs within the watershed sector range from entry level to high skilled, seasonal to permanent, and technical to policy-oriented roles. They really can cater to individuals at various career stages, whether that's youth entering the workforce or experienced workers transitioning.

The watershed sector is primed right now for further growth over the next decade. Federal investments, particularly through mechanisms like the B.C. watershed security fund, which I mentioned earlier, can really serve as a catalyst to foster growth in this sector, while also attracting other investments and creating opportunities for a just transition for workers that allows them to stay in their communities with family-sustaining jobs. Then that's an opportunity for them to be reinvesting back into their local economies.

● (1725)

Ms. Laurel Collins: Thank you so much.

Mr. Pomeroy, you had talked about some concrete actions we need take, including national coordination, prediction and identifying vulnerabilities.

Can you speak about some of the other actions the federal government needs to take?

Dr. John Pomeroy: Yes.

The first is to fix the federal fragmentation. We have about 20 departments with water functions, including four with large ones. The Canada water agency has been stood up, but these functions have not been coalesced into the agency. This is not working yet; we just added another fragment to the mess. We need to do better than that. We have to put these in the agency and make that agency work.

The second is to collaborate. We need national water leadership, not federal water leadership. I have to say that we need to get out of Ottawa and into the provinces, territories and communities to see what's going on.

The third is to fund water science. We're seeing the shutdown of the largest freshwater research program in the world right now in Canada, with no follow-on proposed.

The fourth is to fund observations. We have the equivalent of 64 experimental lake areas with the global water futures observatories. They will shut down next year without further funding. There's no continuity plan.

The final one is to address the emergency. We have a drought in our history as a nation, from B.C. to Labrador and from the Prairies to the Arctic. It's worse in Alberta and parts of Saskatchewan than in anyone's lifetime. I'm not seeing much federal interest or response to it. As a westerner, I don't understand this.

Look at what's happening in B.C. with the problems with hydroelectricity, water supply for communities, and on and on. Great Slave Lake hit the lowest water level ever recorded this fall in the Northwest Territories. It's a disaster for the Mackenzie basin.

The Chair: Thank you very much.

We'll go to the second round. We'll do the same thing. I'll cut it by about 40%.

Mr. Kram, you have three minutes.

Mr. Michael Kram: Thank you, Mr. Chair.

I'll start with Dr. Pomeroy from the University of Saskatchewan, which is just downstream from the Lake Diefenbaker irrigation projects.

Could you share your views with the committee about the Lake Diefenbaker irrigation projects?

Dr. John Pomeroy: Yes. Those irrigation projects are essentially completing the plan for Lake Diefenbaker, which was a reservoir built for irrigation in the 1960s. Very little of that irrigated water use was taken up at the time. It's the largest water reservoir in the Prairies and has tremendous capacity to support irrigation.

That said, it was designed in a time when we had a mid-20th-century climate and water regime. This year, that reservoir received only 28% of its normal inflows. I think that going forward, we have to realize that there will be times of great stress, with water supply issues across the province. When it was designed and built, there was no consideration of the downstream indigenous communities in the Saskatchewan River delta, the largest freshwater delta in North America. It has more or less dried out in the last few years. The muskrat have been wiped out.

For water management of that irrigation system, we need to look at things that are broader than just irrigation. Yes, we can do that, but there is also hydroelectricity, as well as water for communities, mines and other developments, as well as the ecosystem and the downstream indigenous communities, all while making sure there's enough left over for Lake Winnipeg and Manitoba Hydro. These are difficult things, but with appropriate prediction systems and multi-use operation of these reservoir systems, I think we can do it. We can reduce some of the impacts of climate variability and extreme droughts and floods on the water systems in the central Prairies.

Mr. Michael Kram: You touched on this at the very end: When it comes to climate adaptation and resiliency, can you speak about the benefits of irrigation projects such as this one and others?

Dr. John Pomeroy: I think southern Alberta has shown that this has tremendous economic input effects on its economy and on food exports with a diverse range of crops. Saskatchewan needs to look at irrigation to make sure that it has the marketing in place so that farmers want to irrigate, that we have the funding to do it and that we are growing high-value crops used around the world.

In terms of climate change impacts on other agricultural regions, interest in what western Canada and Canada as a whole can grow will increase over time. That would be to the benefit of this project.

Mr. Michael Kram: I only have a few seconds left, Mr. Chair.

This is for the witnesses from the Canadian Nuclear Association.

I wonder if you would be willing to make a written submission to the committee about the environmental impact and approval process with respect to water that new nuclear projects currently have to go through, with some suggestions about how to improve and streamline the process.

I think that's my time, Mr. Chair.

● (1730)

The Chair: Thank you very much.

Ms. Taylor Roy, go ahead for three minutes.

Ms. Leah Taylor Roy (Aurora—Oak Ridges—Richmond Hill, Lib.): Thank you, Mr. Chair. I wish I had much more time, because I have many questions.

Thank you to our witnesses for being here.

What I'd like to focus on is how we enforce a coherent strategy for water management. I heard testimony about some things you looked at, Mr. Pomeroy, back in the nineties, which were predicting what was going to happen. Things didn't change very much.

Right now, we're talking about a national water agency, which is amazing. It will consolidate, coordinate and do more research. However, one problem I see constantly in Ontario, where I am, is that we're not all working in the same direction. There are different priorities and objectives.

One example in Ontario is a connector highway called the Bradford bypass. It's going to be a small highway of 16 kilometres costing over $1.5 billion. It's crossing the Holland River twice and having a huge impact on Lake Simcoe. It's taking up wetlands, farmlands and all the natural infrastructure we need to keep. The priority of the municipalities and the government is development and putting in another roadway that will help with traffic congestion, which is real, but rather than looking at other options, they're sticking with a lot of the same solutions we had before this climate crisis.

I think Lake Diefenbaker is a bit the same, from what you were saying. It's necessary, but how we look at it and what we do have to change.

How do you think we can address that? Even if the Canada water agency consolidates and does the research, if other levels of government don't move in the same direction, we are going to have a very hard time meeting our goals when it comes to water management and fighting climate change.

This is for Mr. Pomeroy.

Dr. John Pomeroy: We have to be very careful that we don't regret our developments in a few decades because of the rapidly changing conditions we have.

Something you mentioned was road development. Road salts are heavily used in southern Ontario. They are in fact making the recovery of Ontario's lakes much more difficult, because they cause stratification of the water, and therefore more phosphorus is trapped in there and there are more algae blooms. This is recent science that came out of the University of Waterloo.

These results, and mitigation measures, have to be taken into consideration in these developments. How can you develop the road without having those impacts? This is something that Canadians have worked on for a long time, and I think it can be done, but we have to be planning for the hydro-climatic conditions of the mid-21st century, not for the mid-20th century, and that will be crucial for those things.

[*Translation*]

The Chair: Thank you.

Ms. Pauzé, you have the floor for about a minute and a half.

Ms. Monique Pauzé: First, I have a request for Ms. Baker, because she didn't answer my question. I want to know what the Canadian Nuclear Association intends to do to assess and manage the accumulation of radioactive waste in waterways, when the Ottawa River is already contaminated with tritium, for example. I'd like her to send us the answer in writing.

I'd also like to ask Ms. Maezo a question. We talk a lot about the Canadian Water Agency, but there's also the question of food safety. This summer, we know that people died after eating contaminated cantaloupe, for example.

Do we have the right priorities when talking about the Canada Water Agency? Shouldn't we be talking instead about food security and ways to strengthen it, especially at the border?

Ms. Maria José Maezo: Of course, food security is a priority. With climate change, we risk receiving fewer imports from countries that also have problems. This can be managed in all sorts of ways, including trade.

At the moment, for example, we could put more emphasis on our local producers to help them, such as our dairy and beef farms, which have the highest environmental standards and much less impact on the environment than our neighbours in the United States, for example. Priority should be given to helping our local farms remain healthy and sustainable and retain their vital agricultural territory.

● (1735)

The Chair: Thank you.

Ms. Collins, you have the floor.

[*English*]

Ms. Laurel Collins: Thank you, Mr. Chair.

This question is to Ms. Tull.

My colleague Taylor Bachrach, the MP for Skeena—Bulkley Valley, moved a motion that was passed at this committee, calling on the federal government to implement a $1-billion watershed protection fund with the help of the B.C. government and other investors.

Could you explain why such a fund is essential?

Ms. Coree Tull: I commend this committee for passing that motion.

It's critically important to see the scale of investment that's needed for the disasters and droughts of this past summer. The severity of the crisis we're seeing continues to be demonstrated. With the drought that's continuing right now, we're seeing that the drinking water supplies for first nations and municipalities are dangerously low.

The village of McBride is still in a local state of emergency. Ranchers are running out of hay for cattle, river systems are running low, and hydro power production is experiencing a significant reduction due to those water levels. Investment allows us to get ahead of these crises. It allows us to do the work that advances the potential to get to watershed security.

Some research was done to look at the scale of need. This is on the generous side, but we're looking at $3 billion, which is about $300 million annually, that needs to be invested in our watersheds to get ahead. That goes to rebuilding our natural defences, such as forests, wetlands, and stream banks. These are really the critical first lines of defence against—

The Chair: I'm sorry to cut you off, but we only have limited time.

Mr. Leslie, you have three minutes.

Mr. Branden Leslie: Thank you, Mr. Chair.

I'll start with Ms. Baker.

It seems there is a lot of anti-nuclear sentiment around this table. I think back to our Minister of Environment, Mr. Guilbeault, tweeting—I wasn't sure if it was before or after he was arrested—that it was time to close the Pickering nuclear plant. Thankfully, that has been ignored.

I'm curious as to what your thoughts or advice might be in relation to fresh water and the refurbishment of the Pickering nuclear generating station. Are you aware of the minister's original tweet on that sentiment?

Ms. Jill Baker: I don't really follow Twitter that much, so I can't comment on the minister's tweet.

Could you repeat the second part of the question?

Mr. Branden Leslie: It's just on any advice as it relates to freshwater management regarding the refurbishment of the Pickering nuclear generating station.

Ms. Jill Baker: I actually don't know anything about how that plant works specifically. I don't think I can answer it.

I can say that any refurbishment or plant that operates in Canada is very closely regulated by the CNSC, and that includes its use of water. It's also monitored closely by Environment and Climate Change Canada with respect to the quality of the water.

I will ask Sorouche if he has anything to add to that.

Mr. Sorouche Mirmiran: Thank you.

Usually the water intake from a power plant is ejected back into the water, so when it comes to fresh water use, it's one of the most sustainable ways of using fresh water to produce energy.

When it comes to refurbishment, it's an opportunity to use new systems or components to make even better use of water when it comes to waste and so on, or even to cooling. A refurbishment is just a matter of changing the system and components to extend the lifetime of a nuclear power plant. It's an opportunity to improve the environmental footprint and so on.

Thank you.

Mr. Branden Leslie: Thank you.

For an association, it must be rather frustrating to see such an anti-nuclear sentiment from so many of certain members of Parliament. I'm curious as to what sort of outreach you've done to try to educate people.

I know our committee is looking at travelling to see an oil sands facility. I'm curious as to whether you would be willing to have one of your members open their doors so that we could go and see the work that is being undertaken with respect to nuclear waste, as well as the operations that increase the reliable baseload power while helping our environment here in Canada.

The Chair: I assume the answer would be yes.

● (1740)

Ms. Jill Baker: Yes.

The Chair: Thank you. We have to stop there.

We'll go to Mr. Ali for our last questioner.

Before we go to Mr. Ali, I just want to reassure Mr. Deltell that the names that he's asking for have been obtained, and we will be sending around a notice. It has to be translated because it has to be in both official languages. As soon as it's translated, those names will be sent to all members of the committee.

Mr. Ali, go ahead.

Mr. Shafqat Ali: Thank you, Mr. Chair.

Professor Pomeroy, thank you so much for appearing today. You have deep knowledge. I learned so much listening to you.

I know you touched upon certain issues related to fresh water. I just want to go into more details on your views.

Are there major issues related to fresh water in Canada that the federal government is not adequately addressing? If yes, what are they and how can they be better addressed?

Dr. John Pomeroy: Thank you for the question.

I believe there are three primary areas that could have a greater federal approach.

One was previously mentioned by experts before this committee. It is improvement in water prediction. The provinces and territories need help. Some big, rich provinces have excellent computer models that do this. The Americans run everything on supercomputers; we don't. Some provinces are using Excel spreadsheets for their flood predictions. We as a country need to do better on that. We'll save ourselves money —20 to one—by doing that.

The second is transboundary waters. We don't handle them very well. We have not had severe transboundary stress in this country. I believe we're headed for it this year, in the west and in the north. We will see further issues with the Americans. Eighty per cent of Canadians live along waters shared with the United States. We have to look after that relationship very carefully, as well as our interprovincial relationships, to make sure we remain a peaceful and friendly federation.

As the final one, last week I spent the morning with the Federation of Sovereign Indigenous Nations in Saskatchewan. They continue to have profound and severe water problems, including with source water protection and water supply, and there are other issues for some communities. They also have a lot of ideas about solutions. I think more engagement with them would benefit everyone and would certainly help them find ways through the current crisis they have.

Mr. Shafqat Ali: Thank you.

As you know, the federal government is currently working to establish an independent Canada water agency with the legislation currently in the House. What do you think that agency's priorities should be as it builds capacity and starts to advance its work?

Dr. John Pomeroy: I was very happy to see the Canada water agency advancing. This is a long-held dream for many people who felt more federal leadership would be helpful here.

The first priority is a focus on observations. It should have the active observations of water quantity and quality brought together and dispersed to Canadians in a national way through collaboration.

Second, predictions can be added to those observations. They go together. Again, there's that national help to provinces, municipalities, territories and first nations.

The third is transboundary waters. We need to be looking after the transboundary water relationship.

The fourth is integrated river basin management. We don't do it in Canada and we're going to have to. Europe is doing this now between countries. We can certainly do this between provinces. We will have to in order to adapt to the stresses that climate change puts on our fresh water moving forward.

Thank you.

Mr. Shafqat Ali: Thank you.

The Chair: Thank you so much, Dr. Pomeroy, for being here in person to share your experience, knowledge and insights with us. Your testimony, and the testimony of all the witnesses who have appeared today in both panels, will help our analysts draft what I hope will be a very impactful report.

Thank you to the witnesses.

We look forward to continuing this study and producing a report that reflects your perspectives.

Thanks again.

[*Translation*]

I thank the members of the committee for being here.

Have a good weekend, everyone.

I look forward to seeing you next week.

The meeting is adjourned.