Great Lakes Fishery Commission

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Written Submission to the House of Commons Standing Committee on Environment and Sustainable Development

Regarding the Committee's Comprehensive Study of the Role of the Federal Government in Protecting and Managing Canada's Freshwater Resources (M-34)

May 7, 2021

Context

Canada is a nation that, perhaps more than any other, has been endowed with an abundance of freshwater resources; and while all of Canada's lakes, streams and rivers are critically important to any national freshwater strategy/policy focus, the Great Lakes are collectively the largest, most unique, and most impacted vis-à-vis human usage.

Canadians typically view the Great Lakes as a place to cottage or to fish, and, while true, the Great Lakes are more than just a playground. The Great Lakes are home to 3,500 plant and animal species (many of which are unique to the region) and 30% of Canada's total human population. The lakes are the source of drinking water for millions of Canadians, they provide sustenance and social influence for countless communities and Indigenous peoples, and they comprise 21% of the planet's fresh surface water. Economically, the Great Lakes are an engine that provide 237,868 jobs, $45.4 billion in direct economic activity, $13 billion in recreation/resource interests, and they facilitate the movement of $19.8 billion worth of goods annually. All this to say, while the Great Lakes are a natural resource that are rightly subject to domestic (local, provincial and federal) governance and regulation, the Great Lakes are also an important pan-Canadian asset, with continental implications, given their status as international boundary waters. It is for this reason that binational collaboration is essential to the health and long-term sustainability of the resource and must be considered as part of any national freshwater strategy or future federal freshwater initiative.

The Great Lakes are a binational treasure that face numerous challenges to their long-term sustainability due to threats stemming from cross-border geography, complex political composition, mixed jurisdictional support structures, and growing pressures prompted by trade, industrial users, climate change, and a range of human activities throughout the Basin. A failure to fully understand these factors, and to respond in a thoughtful, informed, consistent, and cooperative manner, will return the Great Lakes to a divided governance state not seen since the first half of the 20th Century. Success in the Great Lakes – or any freshwater environment - will require investments, precise policy attention, and a collaborative strategy both within Canada and with American partners with which we share the lakes.

The Great Lakes Fishery Commission (GLFC)

In 1955, Canada ratified the *Convention on Great Lakes Fisheries* (the Convention) to address what had become an ecological and economic crisis within the Great Lakes. Furthermore, history demonstrated that, if we are to preserve and grow the economic and environmental advantages of the Great Lakes, we must collaborate with Americans.

While advancing solutions that benefit one's neighbour is hardly intuitive, it is a reality that has become increasingly apparent – especially when it comes to water governance. In fact, divided governance has long been a vexing part of the Canada/US relationship in the Great Lakes Basin. The eight Great Lakes States (Minnesota, Wisconsin,

Michigan, Illinois, Ohio, Indiana, Pennsylvania, and New York), Ontario, and Indigenous nations are, because of their geography, required to collaborate on environmental and fisheries management issues, but the struggle between national and binational interests has long challenged legislators.

For example, 70 years ago, Louis St-Laurent's Minister of Fisheries, Hon. James Sinclair (a BC resident), recognized the innate national value of the Great Lakes, but also recognized that this binational resource could not be sustained without thinking and acting beyond national boundaries. He knew that a failure to consider US interests would spell disaster for our own. Sinclair noted, "*When Great Lakes conservation became an international matter it was obvious that the Province of Ontario could not do anything about the decline in Lake Trout unless action was taken by the United States.*" As a former Minister of State for External Affairs himself, Prime Minister St-Laurent knew that when Canada played well with allies, progress was easier than when we acted unilaterally. This kind of thinking was and continues to be prudent, especially when it relates to freshwater management in and around the Great Lakes.

By the early part of the 20th Century, due to human activities, threats were multiplying and damaging the Great Lakes ecosystem/economy, and provincial, state, and national governments were mired in jurisdictional silos. More than one treaty collapsed as Canada and the US failed to agree on how to tackle shared problems, and this divided governance intensified emerging challenges like native species loss, habitat deterioration, the arrival and penetration of invasive species (i.e.: sea lamprey), and the environmental pollution of the Basin. By 1954, public outcry and necessity had driven governments to ratify the Convention, and to create the Great Lakes Fishery Commission (Commission)).

That treaty created the Commission, and assigned three main duties:

1. To help the various regulatory and management agencies work together;
2. To formulate and drive a freshwater science program upon which to base healthy ecosystem and fishery management decisions; and
3. To formulate and deliver invasive species control. For example, sea lamprey, an invasive predator was ravaging Great Lakes fish stock hence requiring coordinated mitigation as all pre-treaty control efforts had failed.

The Commission ended the cross-border bickering that had resulted in constant conflict, a nearly collapsed fishery, a badly damaged ecosystem, and severe economic losses on both sides of the border. The Commission also created a scientific understanding of the fishery and how to address problems, and notably, it reduced sea lamprey populations by 90% across the Great Lakes Basin. This work directly facilitated the restoration of the $8 billion fishery.

By considering Great Lakes problems in a holistic manner, success was finally attained for all involved. The Commission's sea lamprey control program is the only example of any marine vertebrate being successfully controlled on an ecosystem-wide basis in the

world. None of this would have been possible without sustained binational cooperation – prompted by the Commission - involving the Province of Ontario, the Great Lakes States, Indigenous governments, and the federal governments of Canada and the US.

Committee Questions

In addition to the information already noted above, the Great Lakes Fishery Commission is pleased to provide the following responses (below in blue) to the questions provided by the House of Commons Standing Committee on Environment and Sustainable Development regarding the Committee's study on freshwater (M-34).

1. Introductory information

    a. Which issues related to protecting and managing freshwater does your organization work on?

    Under the terms of the *Convention on Great Lakes Fisheries,* the Great Lakes Fishery Commission (Commission) has been assigned several key responsibilities including:

    - To establish and maintain working relationships between government regulators/policy makers, and habitat and fisheries managers responsible for Great Lakes oversight in Canada and the United States (and within the sub national entities involved);
    - To develop a scientific basis on which to base freshwater management decisions, and to facilitate a knowledge transfer of the same; and
    - To undertake a comprehensive sea lamprey control program within the Great Lakes and Great Lakes Basin.

    The Commission has also adopted a stance that prompts involvement in related matters. For example, starting in 2018, the Commission partnered with four Great Lakes organizations (the Council of the Great Lakes Region, Stratégies St. Laurent, Freshwater Future Canada, and the Great Lakes St. Lawrence Cities Initiative) to research and articulate a comprehensive response to issues such as the impact of invasive species on the functionality of the Great Lakes and the St. Lawrence River system, toxics and other harmful pollutants, nutrient levels, beaches and bacteriological contamination, and climate change as it relates to water and shoreline infrastructure. That report, released in 2020, which was jointly funded by Environment and Climate Change Canada, is available through the GLFC upon request. It can also be found online at https://westbrookpa.com/documents/glslcollab/reports/action-plan/Great-Lakes-and-St-Lawrence-Integrated-Report-EN.pdf.

2. Interaction and collaboration with federal departments and agencies

    a. Does your organization interact with federal departments and/or agencies on freshwater issues? If so, on which issues and with which departments and/or agencies?

    Regular interactions and long-term partnership building are part of the Commission's core mandate. In keeping with this charge, the Commission has regular and productive working interactions with government agencies including:

    - Department of Fisheries and Oceans Canada (DFO);
    - Environment and Climate Change Canada;
    - Global Affairs Canada (GAC);
    - US Fish and Wildlife Service;
    - US Army Corps of Engineers;
    - US Department of State (DOS);
    - US Environmental Protection Agency;
    - US Geological Survey;
    - National Oceanic and Atmospheric Administration;
    - Various provincial and state fishery management agencies (i.e.: http://glfc.org/pubs/pdfs/research/botemem.pdf); and
    - Numerous educational institutions (i.e.: Michigan State University, University of Guelph, Carleton University etc.).

    In addition, the Commission collaborates with other treaty-based organizations operating within the Great Lakes (i.e.: International Joint Commission etc.), with other Commissions (i.e.: Great Lakes Commission, Pacific Salmon Commission etc.), and with various international bodies (i.e.: African Center for Aquatic Research and Education etc.). These partnerships, and others, allow the Commission to establish freshwater data foundations and to meaningfully engage on issues – both long-standing and emerging - impacting on the health and sustainability of the Great Lakes and other freshwater resources. Whether addressing changes in nutrient status and energy flow through lower trophic levels, or creating a conceptual model to predict and communicate influences on fish biomass, the Commission crosses political boarders and jurisdictional confines to attain evidence-based conclusions to the many challenges facing the Great Lakes, and Canada's other freshwater resources.

b. Do the specific freshwater issues targeted by your organization fit within the mandate of a given federal department and/or agency or do they relate to more than one department and/or agency? If more than one, have you been able to identify a lead department and/or agency with which to engage?

The short answer to this question is no. The scope of the established Commission mandate does not fit precisely within any single department/agency. The Commission's Canadian operations and interests in 2021 alone, have involved interactions with DFO, Environment and Climate Change Canada, PCO, GAC, and other bodies. This multi-departmental reach is a current challenge for the Commission precisely because the Commission's mandate broadly crosses departmental lines while our Canadian fiduciary structure is nested within DFO (unlike in the US where our fiduciary is the Department of State).

Since the 1980s, the Commission portfolio in Canada has been nested within DFO. While not operational in nature, DFO's function is to serve as fiduciary for the Commission's Canadian government funding allocation. Between the time of the Commission's inception in 1955 and the early 1980s, the Commission was supported by External Affairs Canada (now GAC). The latter arrangement coincides with Canada's handling of other binational commissions - such as the International Joint Commission (IJC) - and with the Commission's US governance structure where the portfolio is supported by the DOS. For several reasons, the constraints of the current Canadian structure have become fraught, and change is needed.

As has already been said, the Great Lakes are critical binational assets that contain 21% of the world's surface fresh water. In North America, the system is invaluable as the source of drinking water for more than 50 million people, more than 1.5 million jobs, 60 billion dollars in wages annually, and they are the backbone for a 6 trillion-dollar regional economy that would be the third largest in the world if it stood alone as a country. It is important to note that this is maintained and protected via careful binational partnerships such as those described in the *Convention on the Great Lakes Fisheries*. In this context, the Commission asserts that Canada must place a stronger prominence on binational partnerships such as those fostered and safeguarded by the Commission.

The Commission is actively seeking to move the Commission's Canadian fiduciary from DFO back to GAC as a way of addressing the above.

c. Have you encountered notable successes in engaging with the federal government on freshwater issues? If so, please specify. If you have not had success in doing so, what in your opinion is the reason (e.g., no

program available tailored to your needs, no identifiable service or unit within a department and/or agency with which to engage)?

The Commission was created (in part) to control invasive sea lamprey in the Great Lakes. By working with our partners, including the Government of Canada and its various facets, success has been possible. While invasive sea lamprey populations can never be eliminated from the Great Lakes, control is possible. This is a success for two reasons:

1. Uncontrolled non-native sea lamprey populations in the Great Lakes would have collapsed fish populations and devastated the ecosystem. Controlling the invasive species has allowed that crisis to be averted, and helped the freshwater fishery to recover and grow into one of the largest and most productive in the world; and
2. The lessons learned from sea lamprey, and from the Commission s science mandate, have advanced the state of knowledge and freshwater science. The resulting knowledge transfer has assisted freshwater ecosystems well beyond the Great Lakes and the Great Lakes Basin.

As a second example, between 2018 and 2020, the Commission and four other Great Lakes organizations received federal funding from Environment and Climate Change Canada to research a comprehensive response to issues such as the impact of invasive species on the functionality of the Great Lakes and the St. Lawrence River system, toxics and other harmful pollutants, nutrient levels, beaches and bacteriological contamination, and climate change as it relates to water and shoreline infrastructure.

The Great Lakes and St. Lawrence Action Plan 2030 provided a forward-looking roadmap to tackle many of the greatest challenges facing the Great Lakes/St. Lawrence Region. To ensure the successful implementation of the Action Plan, new approaches were proposed, and in Budget 2021, progress on the Action Plan started.

To address the complex challenges outlined in the Great Lakes St. Lawrence Action Plan 2020-2030, the *Expert Panel* recommended a new approach, based on the following principles:

1. Alignment and integration of actions and investments from the federal level, right through to those living, working and visiting the shorelines of the Great Lakes and St. Lawrence, to overcome the fractured nature of activities across this enormous geography;

2. Risk-based prioritization and risk management to devote investment and effort where it is needed most, and to minimize risk to avoid impacts and costs in the future;
3. Purpose-oriented research and innovation to inform locally relevant technical assistance; and
4. Formal monitoring and evaluation, to measure progress and to provide the public with an independent evaluation of the governments' performance. To bring about the changes needed to adopt this approach, a new institutional arrangements model, an investment strategy, and a roll-out plan were included. The proposed institutional arrangements are inspired by two similarly complex, multijurisdictional water system management programs, the Great Lakes Restoration Initiative, and the Chesapeake Bay Program. The new institutional arrangements would require six elements:
    a. A federal cross departmental taskforce, that is responsible for federal financing and alignment of departmental effort with regard to Great Lakes St. Lawrence protection;
    b. A Great Lakes St. Lawrence Commission with Indigenous, business, NGO, academic, and municipal representation that guides and coordinates implementation;
    c. An Indigenous Great Lakes St. Lawrence organization, with representation of Indigenous organizations and communities in the region;
    d. Implementation teams on the four main challenges;
    e. Centres of research and innovation, and technical assistance teams; and
    f. Additionally, oversight by the Federal Commissioner of Environment and Sustainable Development.

This strategy would require a ten-year federal commitment focused on shoreline resiliency along the Saint Lawrence and in the Great Lakes Basin where there has been acute and repeated flooding and erosion. Another significant area of investment would be in upgrading outdated wastewater treatment plants, particularly those that are already required to upgrade from primary to secondary treatment to attain compliance with federal wastewater effluent regulations.

In addition to improving the quality of the Great Lakes and St. Lawrence, the actions outlined in the Action Plan 2020-2030 offer an effective means to stimulate the economy and create jobs. Based on Statistics Canada

estimates, $500 million in shoreline restoration investments would be expected to create upwards of 3,500 person-years employment.

While much of this proposal is yet to be adopted by government, formative steps were taken in Budget 2021. Specifically, Budget 2021 proposed two measures taken from the Action Plan:

1. A $17.4 million investment into a Canada Water Agency (needed to coordinate and implement the other recommendations); and
2. $25 million in new financing for Environment Canada for a first-ever "Census of the Environment" to inform other technical proposals.

The report is available at: https://westbrookpa.com/documents/glslcollab/reports/action-plan/Great-Lakes-and-St-Lawrence-Integrated-Report-EN.pdf.

d. Do you foresee engaging with the new Canada Water Agency? If so, in what way? What are your organization's expectations with respect to the Agency?

The Commission would anticipate working with a Canada Water Agency but would underscore that the Canada Water Agency model should not be viewed as a catch-all for Great Lakes issues, funding, and focus.

Water and water governance in Canada are complex and multi-jurisdictional. The federal government has responsibilities related to fisheries, navigation, federal lands, Indigenous affairs, and international relations including the management of boundary waters. The Government of Canada also has significant responsibilities for agriculture, health, and the environment, and it serves a substantial role in supporting aquatic research and technology, and ensuring national policies and standards are in place on environmental and health-related issues. To do this, a patchwork of more than 20 federal departments and agencies currently have responsibilities for freshwater. As a further barrier to a cohesive and holistic national freshwater strategy, provincial, territorial, and local authorities hold certain financial, legislative, policy and regulatory levers which apply to water management within their own jurisdictional confines. This scattered jurisdictional reality exists, even though the Great Lakes flow across multiple political boundaries including the Canada/US border. These facts mean issues such as the impact of invasive species on the functionality of the Great Lakes, toxics and other harmful pollutants, nutrient levels, beaches and bacteriological contamination, and climate change as it relates to water and shoreline infrastructure, have economic, social, and environmental significance to the Great Lakes Region in particular, but also to Canada and North America.

It is worth noting that these areas of focus harmonize with the Action Plan to Protect the Great Lakes and St. Lawrence 2020-2030 (May 2020) as presented by the Great Lakes and St. Lawrence Collaborative. Assuming the Canada Water Agency is tasked to coordinate these items, the Commission would have several areas of shared interest on which to liaise with the Agency. Notwithstanding these shared interests, the Commission's treaty responsibilities would not be supplanted, nor would the Canada Water Agency effectively function as a sole-source coordinator for Great Lakes issues and policy. The Commission asserts that this quarterback function, as it relates to the Commission, should rightfully be vested with GAC.

3. Federal water legislation, policies and regulations

    a. Does your organization interact with federal departments and/or agencies on policies, legislation, regulations, or funding programs related to freshwater? If so, please specify.

    b. Can you identify any current gaps in federal water legislation, policies, regulations, and/or initiatives, or in general across jurisdictions? If so, please specify.

    c. Do you feel the federal government could play a more effective role in protecting watersheds in Canada? If so, which watersheds and how?

    d. Are there areas of freshwater policy, legislation and/or regulation where you feel the federal government should play a greater role?

    e. Are there areas of freshwater policy, legislation and/or regulation that you feel the federal government should vacate and leave to another level of government or to the private sector?

    f. Are you aware of instances where federal freshwater policy, legislation, regulations, and/or initiatives have clearly benefitted from your organization's input?

    In response to the questions noted within Section 3 (above), the Commission offers the following.

    Article IV of the Convention directs that the Commission shall have the following duties:

    > "*To formulate a research program or programs designed to determine the need for measures to make possible the maximum sustained productivity of any stock of fish in the Convention Area which, in the opinion of the Commission, is of common concern to*

the fisheries of the United States of America and Canada and to determine what measures are best adapted for such purpose… to coordinate research made pursuant to such programs and, if necessary, to undertake such research itself… to recommend appropriate measures to the Contracting Parties on the basis of the findings of such research programs."

This Article is the basis of the Commission science mandate as it provides specific direction and broad authorization for the Commission to interact with federal departments and/or agencies on policies, legislation, regulations, or funding programs related to items such as freshwater.

Over the years, the Commission has established teams and mechanisms to undertake these tasks, and to shares findings with governments and regulators. While the specifics of the Commission's competitive and directive research programs are too extensive to be comprehensively captured within this brief (information can be provided upon request and/or found at: www.glfc.org), the following are examples of note:

- The Partnership in Ecosystem Research and Management (PERM) supports three faculty research scientists at Michigan State University's Department of Fisheries and Wildlife and two scientists in the Department of Integrative Biology at the University of Guelph. The original PERM agreement was signed in 1997 between the Commission and MSU-FW, and was expanded to Guelph in 2001. PERM scientists have worked extensively with the Commission's science program on sea lamprey chemoreception, movement ecology and behavior, population dynamics, and assessment.
- Partnerships with the US Geological Survey (USGS) provide science and regulatory support to the Commission. The Hammond Bay Biological Station (HBBS) is a field station of the USGS Great Lakes Science Center that is jointly managed and operated via a collaborative agreement between the Commission and USGS. Scientists at HBBS conduct research and provide technical support to the Commission and its sea lamprey control agents within the US Fish and Wildlife Service and DFO. The USGS Upper Midwest Environmental Sciences Center also provides technical assistance, regulatory affairs support, and emerging technology research for the Commission and its control agents.
- The Commission's Science Transfer Program (STP) is intended to improve fishery management to successfully achieve fish community objectives by identifying science and science products that can inform management needs and make science accessible

to managers for decision-making. Science transfer products differ from typical research products in that they are easily accessible decision and communication support tools, such as fact sheets, slide decks, graphical figures, decision trees, or video vignettes that convey synthesized, scientifically rigorous material in simple and concise ways. The STP is advised by a Science Transfer Board (STB) consisting of fishery managers, sea lamprey control agents, and scientists. The STB identifies and prioritizes fishery management and sea lamprey control issues requiring science transfer through a "horizon scan" process. Ideas are solicited from the Council of Lake Committees, Sea Lamprey Control Board, and the broader Great Lakes management and science communities, as well as stakeholders and industry partners. The information gleaned via this process is made available to governments and regulators for deployment in the Great Lakes and other freshwater ecosystems.

In addition to the general replies provided, there is one specific question that is especially critical and worthy of extra consideration. The Committee asks, “Are there areas of freshwater policy, legislation and/or regulation that you feel the federal government should vacate and leave to another level of government or to the private sector?” In reply, the Commission notes that the fisheries within the Great Lakes are, in accordance with the Canadian Constitution (BNA Act), jurisdictionally controlled by the Province of Ontario. Despite this, the Convention is a federal apparatus with provincial, federal, and continental implications. As has already been outlined, this apparent legislative juxtaposition is because freshwater issues impacting upon the Great Lakes historically flowed over sub national boundaries and demanded a broader response. The Commission asserts that history and success tell us that now is the time to step up on freshwater issues rather than step back.

4. Collection of information and data
    a. Do you believe that there is sufficient data collected and made available publicly about freshwater in Canada?
    b. Do you believe there should be improvement in freshwater-related data-sharing?
    c. Is there any specific type of data or information you would like the federal government to provide to freshwater stakeholders?
    d. Has your organization experienced challenges obtaining well-organized data from the federal government on issues relating to freshwater?

e. Is the lack of standardized data or information across government jurisdictions a problem or challenge for your organization in accomplishing its objectives with respect to protecting and managing freshwater?

In May of 2021, the Commission released an updated Strategic Vision (2021-2025). The document contains three pillars covering:

1. Healthy Great Lakes Ecosystems and Sustainable Fisheries;
2. Integrated Sea Lamprey Control; and
3. Strategic Alliances and Partnerships.

European settlement of the Great Lakes basin, beginning in the mid-1700s, caused fundamental changes in the Great Lakes ecosystem, its fish populations, and fisheries. Settlers altered the basin's physical landscape through deforestation, construction of water-powered mills, and development of canals that broached the ecological separation between the Lake Ontario drainage and other Atlantic drainages, between the four upper Great Lakes and Lake Ontario, and between the Great Lakes and Mississippi River drainages. The increasing human population drove demand for food fishes and led to over-exploited fish stocks, including Lake Sturgeon, Lake Trout, and Atlantic salmon, which reduced the diversity of native species. This all happened because settlers failed to understand the implications of their actions on the freshwater ecosystem. Information gaps continue to negatively impact on the Great Lakes.

To assist in reversing this negative legacy, the Commission has committed to working towards healthy Great Lakes ecosystems and sustainable fisheries. This commitment includes a goal to improve production of fish populations of common concern that benefit from, and support, healthy ecosystems, and sustainable fisheries. The Commission has committed to conduct, coordinate, and communicate research to facilitate informed fishery management decision-making; a core Commission function.

The Commission's view on these matters compels the Commission to answer no, yes, yes, yes, and yes, to the Committee's questions in Section 4 (above). Incomplete data and knowledge limitations have been stymieing success and understanding of freshwater ecosystems from the beginning. Science may know more today, but there is always more to learn if better freshwater resource management is the objective. The Commission's plan requires a comprehensive and multipronged approach, including:

Strategy 1: Identify priority fish populations and monitor their condition;

Strategy 2: Prevent the loss of native fish species from any Great Lake;

Strategy 3: Identify impediments to improving productivity of priority fish populations;

Strategy 4: Support cooperative development and implementation of action plans to address impediments;

Strategy 5: Conduct and coordinate research that addresses biological, economic, and social knowledge gaps identified by fishery managers; and

Strategy 6: Promote the exchange of information on issues affecting the large lakes of the world through sponsorship of and participation in workshops, conferences, symposia, research, and scientific publications.

The full text of the Commission Strategic Vision is available upon request and/or can be found at http://glfc.org/pubs/misc/StrategicVision2021.pdf.

5. International and business issues

   a. Should Canada play a greater role internationally in helping find solutions, either through government and/or the private-sector involvement, to the challenge of global freshwater security?

   b. Do you feel Canadian private-sector companies, including financial institutions, can and should play a role internationally?

   c. What role can the federal government play in better supporting freshwater-related academic research, R&D, businesses, products, and services?

      On April 22, 2016, Canada's Ambassador to the United States received a formal letter signed by several US Senators representing Great Lakes States. That letter pointed out that the Great Lakes are a shared binational treasure that require and deserve binational focus and support from Washington and Ottawa. That letter urged Canada to commit as a full Great Lakes partner by appropriately funding the critical work of the Commission. The senators underscored the negative impacts of decades of Canadian underfunding to the Commission, and extended a renewed partnership offer to Canada. Unfortunately, there was no reply to the US legislators save for inaction. On April 16, 2021, Canadian Ambassador Hillman received a similar letter, signed by a collection of US Great Lakes Senators, from both parties, again urging Canada to fulfil its Commission funding commitments and to demonstrate a deeper Great Lakes commitment. That letter was followed on April 27, 2021, with yet another appeal from the US House of Representatives Great Lakes Task Force.

In Washington, the notion that Canada can and must play a greater role in helping to find solutions to the challenge of global freshwater security is already well established. The US Congress has likewise demonstrated its own commitment by temporarily covering Canada's Commission funding shortfalls, meeting their own fiscal commitments to the treaty, and even by establishing a Great Lakes Restoration Initiative in 2019, to demonstrate the depth of the Congressional commitment to the Great Lakes. This annual funding envelope has increased from $300 million to $475 million US dollars by 2026, and it has made an immense difference in the effort to protect and enhance the US Great Lakes coastlines. Many US lawmakers have argued that the government's responsibility for supporting freshwater-related academic research, R&D, infrastructure, businesses, products, and services, is essential and must be firmly established as a prerequisite to any similar expectation being imposed on private-sector companies, financial institutions, or NGOs.

The Commission's Strategic Vision contains a Strategic Alliances and Partnerships Pillar. With goals that include promises to build and maintain effective strategic alliances to promote sustainable fisheries and a healthy Great Lakes ecosystem, to facilitate the implementation of a Joint Strategic Plan for Management of Great Lakes Fisheries, and to leverage resources to enhance Commission and partner programs, the Commission's commitment to North America's freshwater resources is firm.

Conclusion

While Great Lakes stakeholders have struggled to cope with the growing impacts of climate change, invasive species, polluted beaches, increasing nutrient levels and harmful algal blooms, and exposure to toxics for generations, solutions have been cobbled together in an ad hoc manner and without a Canadian Freshwater Strategy. This lack of collective vision and coordination has stymied positive outcomes, delayed meaningful actions, and permitted infrastructure deficits to grow, new invasive species to become established, and water quality to diminish. Like all organizations, the Great Lakes Fishery Commission has worked towards success within this environment, but federal leadership is needed.

In 1955, the governments of Canada and the US established a clear vision in the Great Lakes, and notwithstanding Canada's recent fiscal and structural shortcomings relating to the Commission, the strength of that vision has endured and served the Great Lakes well. In the decades since being created, the Commission has helped to manage the multi-billion-dollar binational resource, with a consensus approach, for our shared benefit, by fostering an array of cross-border relationships on which to draw when the tone and tenor of more prominent linkages becomes fractured. This model for trust-

base, science-focused, cross-border collaboration has been successfully used for the Great Lakes Fishery Commission, the International Joint Commission, and the International Boundary Commission. Each of these groups are unique in their mandate, but they each rely on working relationships that are rooted in a genuine sharing of resources and goodwill in pursuit of common and reasonable objectives. It is the Great Lakes Fishery Commission’s hope that this type of approach will be of use to the Committee as it considers the role of the federal government in protecting and managing Canada's freshwater resources.