



4 DELIVERING 21ST CENTURY MANAGEMENT FOR FRESHWATER PROTECTION



Photo: Chris Montgomery

Recommendation Summary

Water stewardship is a great challenge of our time. Growing populations. Increasing demand for food and energy. Urbanization. Climate change. These 21st century pressures are mounting and compounding. Effective water stewardship and management is critical to the health of our environment, our economy and to the people of Canada.

While the mandate to manage freshwater is a shared jurisdiction between all levels of government, the federal government is uniquely positioned to take a leadership and convening role in freshwater science, data sharing technology and communication to Canadians about freshwater health.

The Green Budget Coalition recommends scaling up the Freshwater Action Plan,

building on work already underway in the Great Lakes and Lake Winnipeg watersheds, with the following new and expanded investments in Budget 2019:

1. Improving Canada’s ability to address water challenges due to climate change and changing land-use through significant investment in enhanced data-sharing, information and communication of results. **\$20 million per year for 5 years**
2. Creating an aquatic habitat “restoration economy”. **\$110 Million (total) over 5 years; plus estimated revenues of \$5 million per year ongoing**
3. Reducing land-based run-off of nutrients and pollution in Canada’s watersheds. **\$100 million per year for 5 years**
4. Balancing hydroelectric development with improved river connectivity and flow. **\$5 million (total) over 3 years**

Background and Rationale

Sustainable management of our water resources is critical to Canada’s future. The mounting and compounding global challenges of population growth, increasing demand for food and energy, urban expansion and climate change are putting pressure on global water resources, including in Canada.

Already, more than twenty per cent of the world’s fresh water fish are extinct or have become imperiled. It is estimated that by mid-century most of the freshwater ecosystems in the world will be in significant trouble.

It is tempting to think of all this as “someone else’s problem.” Canadians have always believed that we live in a water-rich country. But the fact is: Canada has a water problem, and it needs to be recognized and addressed.



Photo: Roberto Nickson

GBC Feature Recommendations – Alignment with Political Priorities

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Freshwater Protection

Meeting Public Expectations ✓

Improving Health & Wellbeing ✓

Reducing GHG Emissions

Climate Resilience ✓

Reconciliation with Indigenous Peoples

Healthy Waters ✓

Protecting Nature & Wildlife ✓

Clean Growth & Innovation

Economically Sustainable Rural & Remote Communities



A major factor is that, for decades, Canada has failed to collect comprehensive information on a national scale about the health of our freshwater ecosystems.

But what we do know now is troubling.

Unpredictability has become the new normal, particularly in water and natural resource management. Extreme weather events — such as floods in Toronto and Calgary, droughts in British Columbia — are becoming more common. The normal water cycles that people expect or rely on are becoming disrupted. This unpredictability threatens food production, jeopardizes communities and costs Canada millions of dollars. Climate change already affects every watershed in Canada²¹ and is altering the abundance, growth, and recruitment of several North American inland fish species, with particularly severe impacts on coldwater species.^{22, 23} Habitat loss and alteration due to land conversion and resource extraction, such as agriculture, urbanization and forestry, is extensive, impacting a majority of watersheds.²⁴ Pollution from agricultural runoff, wastewater treatment, mining, pipeline spills, oil and gas development and other activities is high or very high in more than one-third of our watersheds.

The federal government is uniquely positioned to take a leadership role in developing a national approach to freshwater protection. Budget 2018 allocated an additional \$14.4 million to the Freshwater Action Plan, focused on the Great Lakes, Lake Winnipeg and Lake of the Woods watersheds. Yet this freshwater problem is national in scope, and thus the Green Budget Coalition believes that this Plan should now be expanded throughout Canada and include a particular focus on the following four issues:

Photo: © Thomas Pick



21. WWF-Canada Watersheds Report 2017. <http://www.wwf.ca/conservation/freshwater/watershedreports/>

22. Lynch, A.J, et al. 2016. Climate Change Effects on North American Inland Fish Populations and Assemblages. *FISHERIES* Volume: 41 Issue: 7 Pages: 346-361 Special Issue: SI

23. Chu, Cindy, et al. 2015. An updated assessment of human activities, the environment, and freshwater fish biodiversity in Canada. *CJFAS* 72 (1): 135-148.

24. *ibid*



Photo: Kalen Emsley

1. Improving Canada’s ability to address water challenges caused by climate change and changing land-use, through data-sharing, information and communication.

Building a World Class Freshwater Monitoring Framework — ensuring a national water quality and quantity monitoring framework that is data sufficient, accessible and comprehensive:

Long-term watershed health can only be accomplished in conjunction with a strong national freshwater monitoring framework that is open and accessible to all sectors of society including academia, the public, and the non-governmental organizations working on freshwater issues. To modernize freshwater management for the challenges of the 21st century, Canada needs to invest in its ongoing national monitoring system to track the state of freshwater as climate change and increased population put more and new pressures on this resource.

The Green Budget Coalition recommends:

- Providing dedicated, long-term monitoring funding for open and accessible data, a process that ensures that availability challenges are resolved, and to reduce the loss of data over time due to programs being disrupted or discontinued;
- Improve regional-provincial-national data integration and comparison by advancing the standardization of data collection and reporting across jurisdictions; and
- Extending coverage of water monitoring catchments to better understand historically underrepresented, and in some cases high-risk, areas (e.g., Saskatchewan, Nunavut, Northern Ontario, Northern Quebec).

Recommended Investment: \$20 million per year over five years



Photo: Ty Feague

2. Creating an aquatic habitat restoration economy

Through strategic investments in departmental capacity, policy and program development, and seed funding programs, the federal government could leverage significant private dollars to greatly improve aquatic habitat, grow local economies, achieve biodiversity outcomes, and facilitate the *Fisheries Act* authorization and permitting process.

Historically, aquatic habitats in Canada have been altered significantly by development and natural resource exploitation. In many instances, fisheries productivity was harmed by impeding access to habitat, eliminating spawning grounds, or infilling aquatic environments. In some cases these actions have placed fish species at risk of extirpation and they have been listed under the federal *Species at Risk Act*. In recent decades, a portion of new damaging activities have been offset based on authorizations under the *Fisheries Act*; however, such efforts often fell short of completely offsetting the harms to fish habitat, and declines continue. Recently, Fisheries and Oceans Canada (DFO) began to support restoration through the Recreational Fisheries Conservation Partnerships Program (RFCPP). Though beneficial, restoration efforts could be improved by adopting a more strategic approach, advancing the most effective restoration techniques, increased federal funding, and exploring new revenue streams and novel ways to match federal dollars with private investment.

The forthcoming amendments to the *Fisheries Act* coupled with recent investments in fish habitat science and a renewed fish habitat protection program reposition Fisheries and Oceans Canada to take a leadership role in growing Canada's multi-billion dollar inland fisheries economy through restored habitat and fish stocks.

The Green Budget Coalition therefore recommends Budget 2019 include the following new investments and revenue stream:

- To build a national aquatic habitat restoration strategy and regional habitat restoration hubs, and create a seed-funding program for inland water habitat protection and restoration — \$10 million in 2019-2020, with an incremental increase of \$5 million per year over the subsequent four years (2020-2024).
- To train DFO staff in the use of habitat banking under the *Fisheries Act*, establish industry standards and practices for habitat banking, and engage industry and non-government groups in habitat bank pilot projects — \$2 million per year for 5 years.
- Implementing an offset fee program for the approximately 1,000 projects that currently receive a Letter of Advice for projects that cause a small area of habitat destruction — Creating estimated revenue of \$5 million per year, ongoing.

Recommended total investment: \$110 million over 5 years

Estimated revenue to offset cost: \$5 million per year ongoing

3. Reducing land-based runoff of pollutants and nutrients

Pollution is a serious concern in 60 of Canada's 167 subwatersheds. In more urban areas, point-source pollution from municipalities and industry, for example, is the primary culprit. In more rural and agricultural regions, agricultural contamination from phosphorus, nitrogen and pesticides are the main drivers. Pipeline incidents, and incidents from the transportation of dangerous goods, are also affecting freshwater ecosystems. Pollution can change the ecology and chemistry of rivers, sometimes in immediate and obvious ways (by killing large numbers of fish or making the water unfit to drink), and in other cases through the buildup of toxic substances in an ecosystem over a long period of time. The National Panel on Contaminants in Wastewater in 2018 recommended that holistic watershed approaches and source control is an important component of protecting human and aquatic health since not all contaminants are effectively or efficiently treated by water treatment plants.²⁵

The federal role in preventing land-based run-off of pollutants and nutrients includes:

- Implementation of international agreements where applicable;
- Facilitating inter-jurisdictional co-operation;
- Conducting research and gathering baseline data;
- Monitoring and analyzing trends;
- Exchanging information;
- Consulting with, and reporting to, the public on how these issues are being addressed; and



Photo: T. Fox Foto

25. Mavinic, Don et al, National Expert Panel Report, Canada's Challenges and Opportunities to Address Contaminants in Wastewater, Canadian Water Network, 2018 <http://www.cwn-rce.ca/focus-areas/blue-cities/national-project-on-contaminants-in-wastewater/>



- Analyzing the areas of highest pollutant loading to these fresh waters and assisting with implementation of best management practices and other strategies on the landscape to reduce pollutant volumes.

Recommended investment: \$100 million per year over five years

Please note that the Green Budget Coalition also recommends related Budget 2019 investments in environmentally sustainable agriculture, including: funding for a National Pesticide Reduction Strategy, which would also help reduce land-based runoff of pollutants; and re-investing in the National Pesticide Monitoring and Surveillance Network, which would contribute valuable information about pesticide run-off. (For more details on these recommendations, see the Sustainable Agriculture and Toxics & Pesticides recommendations, earlier in this document.)

4. Balancing hydroelectric development with river connectivity and flow

The urgent need to move away from carbon-intensive fossil fuels has rapidly increased the demand for green, renewable sources of energy. Due to our relative wealth of freshwater resources, Canada has a unique opportunity to provide hydropower to meet this energy demand in North America. However,



Photo: Ron Whitaker

renewable energy must be developed and managed in a way that ensures Canada's watersheds are not further threatened. Other water extraction and flood control needs must be balanced with requirements for healthy functioning ecosystems. Overall, we must ensure that:

1. Environmental flows and the ecosystem services they provide are maintained; and
2. Fish passage and our free-flowing rivers are protected, and where necessary, restored.

It is a promising step to see environmental flow considerations included in the amendments of the *Fisheries Act*. All projects that will alter the volume and timing of available water beyond a threshold that interferes with the environmental flow needs of the aquatic ecosystem or prevent fish passage should be included as Designated Projects under the new *Fisheries Act*.

To begin implementation at a regulatory level, the Green Budget Coalition recommends:

Recommended Investment: \$5 million over the next three years (2019-2022)



Photo: Ravi Patel

FRESHWATER MONITORING

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