

House of Commons Standing Committee on the Environment and Sustainable Development: Study on Freshwater in Canada

Canadian Wildlife Federation Submission by:
Nicolas W. R. Lapointe, PhD
Senior Conservation Biologist- Freshwater Ecology

The Canadian Wildlife Federation (CWF) appreciates the opportunity to contribute to the Standing Committee on the Environment and Sustainable Development's study of freshwater in Canada.

CWF's mission is to conserve and inspire the conservation of Canada's wildlife and habitats for the use and enjoyment of all. The Canadian Wildlife Federation conducts its activities through a cooperative approach – working with people, business, non-government organizations, and government to inspire collaboration in achieving wildlife conservation. CWF uses the best available science-based information to develop policies, programs and communications. CWF has over 300,000 supporters and reaches over 2.5 million Canadians each year.

Questions for stakeholders in preparation for the House of Commons Standing Committee on Environment and Sustainable Development's study on freshwater

1. Introductory information

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

The Canadian Wildlife Federation (CWF) works on:

- the protection of environmental flows necessary for biodiversity conservation
- protection and management of freshwater connectivity for biodiversity conservation
- protection and management of aquatic habitat for fish production and species at risk
- prevention and management of contaminants in aquatic environments, and
- management of fisheries in freshwater ecosystems.

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?

On the issues listed above CWF interacts with Fisheries and Oceans Canada, Environment and Climate Change Canada, Natural Resources Canada, and the Pesticide Management Regulatory Agency.

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?

They relate to more than one department and agency. We have been able to identify the lead department in each case and, depending on the issue, it is either DFO or ECCC or NRCan.

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)?

Yes and No.

We have successfully engaged with DFO and NRCan in creating a national database of barriers affecting aquatic connectivity.

We have engaged with DFO on implementation of the fish habitat protection provisions of the Fisheries Act. However, within this we have not had meaningful engagement with DFO on application of the fish passage provisions of the Act.

We have had positive engagement with ECCC in connection with reinstating the federal program for monitoring pesticides in aquatic environments. However, unfortunately this has not resulted in a reinstatement of the program.

We have engaged with the PMRA on the impacts of neonic pesticides on aquatic biodiversity and the need for a ban of these substances. Unfortunately, the outcome has not been what we believe is necessary for protecting aquatic biodiversity.

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?

Yes, we do foresee engaging with the Canada Water Agency.

Our primary area of engagement will be in connection with the integration of CWA's responsibilities for quantity and quality of freshwater with the responsibilities of DFO for freshwater. This will be around how the two areas of jurisdiction and responsibility will be coordinated, how fisheries and biodiversity needs will be incorporated into CWA's mission and objectives, and how the creation of CWA can facilitate better outcomes for fish and fish habitat protection. Our hope is that CWA's and DFO's responsibilities will be well integrated and that this will result in a more comprehensive and effective program for the protection of fish habitat and freshwater biodiversity.

Our secondary issue of engagement will be around CWA's responsibilities in protecting fish and wildlife from the effects of aquatic contaminants and pollution. Our hope is that the creation of CWA as a central agency responsible for water quality will result in better monitoring of contaminants and pollutants, more effective collaboration with the provinces and territories on addressing water quality issues that affect fish and wildlife, and improved federal regulatory and enforcement programs.

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.

Yes, CWF interacts with federal departments and agencies on the following policies, legislation, and regulations related to freshwater:

- *Fisheries Act*
- *International Rivers Improvement Act*
- *Canada Water Act*
- *Pest Control Products Act*

CWF interacts with federal departments and agencies on the following funding programs related to freshwater:

- Canada Nature Fund for Aquatic Species at Risk
- British Columbia Salmon Restoration and Innovation Fund
- Habitat Stewardship Program for Aquatic Species at Risk
- EcoAction Community Funding Program

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.

Yes, current gaps in federal water legislation, policies, regulations, and initiatives include:

- Prediction of impacts from future hydropower development and improved knowledge of how to optimize water for power generation across a river system to minimize fish and wildlife impacts -- i.e. the timing and rates of water storage and release.
- Recognizing that land-use alteration is freshwater alteration. Agriculture, forestry, and urbanization all have direct effects on the streams and lakes in the watersheds where they occur. They change nutrient inputs, thermal regimes, sedimentation, and flow rates, which in turn affect in-stream erosion. These activities need to be managed in a way that mitigates and ultimately limits their effects on freshwater and freshwater habitats.

If the CWA can establish science-based thresholds and limits to water use, flow-regime change, and pollution, other agencies and jurisdictions can decide how to achieve these limits.

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

Yes, the federal government could play a much more effective role in protecting watersheds. The protection of aquatic habitat is a federal responsibility, and yet all of Canada's watersheds are inadequately protected. The *Fisheries Act*, meant to be the primary mechanism by which aquatic habitat is protected, is inadequately scoped and implemented to achieve true protection and conservation of our freshwaters and freshwater environment. Four major gaps can be identified:

- 1) DFO is responsible for the protection of physical aquatic habitat. Yet of the thousands of development projects that occur in and around water, DFO only authorizes a few (~200/year). Offsets are required for these, but offsets are undersized and underperform. DFO allows the remaining thousands of projects to proceed without offsetting residual harm, and without tracking the cumulative effects. This harm is accumulating.
- 2) ECCC is delegated responsibility for regulating deleterious substances under the *Fisheries Act*. These are also inadequately managed, as evidenced by the eutrophication of Lake Winnipeg, Lake Erie, and countless small lakes for which blue green algae blooms and anoxic zones are increasingly common. Other contaminants, such as neonicotinoids, microplastics, and heavy metals continue to accumulate in our watersheds.
- 3) Neither DFO nor ECCC manages land use from a watershed context, yet land use alteration is a primary driver of aquatic habitat loss and alteration, and of freshwater contamination. Conversion of forests and wetlands to agricultural and urban use increases runoff,

sedimentation, and erosion. This changes stream flow regimes, causing more rapid and higher peak flows, which result in flooding and erosions, fundamentally altering aquatic habitat. Runoff from farms contains excess nutrients, and runoff from urban areas contains a hazardous mixture of deleterious substances, but such non-point sources of pollution are not properly managed, and limits are not established with respect to each watershed's capacity to absorb and flush contaminants.

- 4) Water extraction is typically managed by provinces or municipalities, and often by single activity rather than by watershed. This can result in overuse, with more water than is sustainably available sometimes being allocated to uses such as agriculture and industry. The needs of aquatic ecosystems and fish are typically considered on a piecemeal basis, either during environmental assessments for a single projects or for a suite of activities such as agriculture -- but not across activities. This can result in insufficient flows to maintain overall ecological integrity, or to support life processes of fish, despite the responsibility of DFO to protect these under the *Fisheries Act*.

The federal government should play a more effective role in protecting aquatic habitat in all of Canada's watersheds. The government needs to take a key role in creating a comprehensive framework that manages all of the things that need to be addressed to achieve sustainable aquatic habitat outcomes.

The science is clear that watershed-scale changes can result in impacts to aquatic habitat. A management framework that identifies how these issues will be managed and mitigated when land and water resources are developed does not exist. Managing only site-specific impacts, which is the dominant current approach, misses the watershed level consequences of cumulative effects.

A management framework should identify what is being managed for, establish objectives, and identify how the management objectives will be attained. A reasonable management framework for habitat should include the following:

- what are the things that need to be managed
- why do we need to manage those things
- what are the objectives, including identifying baseline ecosystem requirements that must be maintained.
- who does what and where (Jurisdiction, partnerships, "best placed" entity to manage)
- how do they do it (regulate, plan, restore)
- supporting activities, assessment, continuous improvement, and
- integration of everything is needed.

Watershed condition and the bio-physical processes that create and sustain aquatic habitat are generally not managed for directly. All of the entities managing land development and water use do a part, but no one manages the whole. Forest managers manage the forests, urban managers manage the cities, agriculture managers manage the agriculture. This is important, but there is no established framework or approach for watershed management to support aquatic habitat.

The absence of a management framework results in there being no coherent and consistent approach for bringing the various decision makers who affect watersheds and aquatic habitat outcomes together. This results in a system where the interests of different agencies and levels of government often work

independently and at cross purposes within silos, missing opportunities for aligning interests and having flexibility to do what is best for aquatic habitat.

In the current aquatic habitat management system, the primary habitat management activity is project-specific regulatory review under the *Fisheries Act*. This means that the present aquatic habitat management effort is reactive, done project by project, is not designed to address the complexity of watersheds or aquatic habitat, manages only a subset of the activities that harm habitat and is confounded by jurisdictional challenges. There is limited scope and ability to prioritize other management activities, and the focus on regulatory work is limiting effort being put toward other meaningful and important priorities.

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

Freshwater commercial, recreational, and aboriginal fisheries face major challenges. Food, social, and ceremonial fisheries are integral to the culture of many Indigenous peoples and together, freshwater commercial and recreational fisheries contribute over \$8 billion annually to the Canadian economy. There are a number of supports needed, perhaps most relevant to the CWA would be the prioritization of ecological requirements in water-use decisions and allocations.

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?

No response at this time.

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

Yes, please see answers to questions 1 through 3 above.

4. Collection of information and data

a) Do you believe that there is sufficient data collected and made available publicly about freshwater in Canada?

No. The coverage of the quantity data, particularly that collected by the Water Survey of Canada could be improved -- particularly in light of future areas of natural resource development and expected impacts of climate change on water quantity and timing. The coverage of water quality data is quite good in many areas and for some pollutants, however there are gaps and important emerging contaminants are either not monitored or monitoring is very limited in scope. Contaminants with limited monitoring include: perfluorinated organic acids and other emerging POPs, pharmaceuticals, veterinary medicines, endocrine-disrupting chemicals, nanomaterials, and pesticides.

b) Do you believe there should be improvement in freshwater-related data-sharing?

Yes. Many provinces and municipalities collect water quality and flow data, but if they do not do so in a standardized way and share the data in a centralized, uniform database, then the data lose much of their value.

c) Is there any specific type of data or information you would like the federal government to provide to freshwater stakeholders?

Some of the specific type of data and information CWF would like the federal government to provide to freshwater stakeholders includes:

- Flow and water temperature predictions under a changing climate, which are needed at the tertiary watershed scale to support important fisheries management decisions for species such as Pacific and Atlantic salmon. Seasonality should be incorporated -- how climate change affects snowpack, freeze and thaw dates, and therefore seasonal water quantity should be considered.
- Analysis of watershed-scale effects of tile drainage on aquatic environments, and design opportunities for drainage to limit or eliminate downstream effects (two-tiered drains, settling ponds, riparian zone protection, thresholds, and limits).

d) Has your organization experienced challenges obtaining well-organized data from the federal government on issues relating to freshwater?

Yes, CWF has 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?

Yes, the lack of standardized data and information across government jurisdictions is a challenge for CWF in accomplishing our objectives with respect to helping protect and manage freshwater.