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Policy Brief – Freshwater Legislation

Introduction to NCC & Relevant Freshwater Issues

The Nature Conservancy of Canada (NCC) is Canada's leading national land conservation organization. A private, non-profit organization, we partner with individuals, corporations, foundations, Indigenous communities and other non-profit organizations and governments at all levels to protect our most important natural treasures — the natural areas that sustain Canada's plants and wildlife. We secure properties (through donation, purchase, conservation agreement and the relinquishment of other legal interests in land) and manage them for the long term.

Across Canada, our organization targets the following freshwater issues:

1) Habitat and biodiversity loss
2) Disaster risk reduction
3) Water quality and sustainability
4) Data availability and monitoring
5) Public engagement in conservation

Interaction and Collaboration with Federal Departments and Agencies

NCC frequently interacts with multiple federal departments and agencies on freshwater issues dependent on the project at hand. These agencies include Department of Oceans and Fisheries, Parks Canada, Environment and Climate Change Canada and the Canadian Wildlife Service. Collaborations with these departments include initiatives concerning aquatic species at risk conservation, restoration efforts, invasive species management, freshwater conservation modelling projects, erosion mitigation efforts and migratory bird habitat protection. In the prairie regions, NCC also regularly partners with Agriculture and Agri-Food Canada to work on projects.

NCC's engagement with the federal government has led to notable success on freshwater issues, such as the NAWMP partnership in Manitoba surrounding wetland conservation, showcased in the implementation of the PHJV, and NCC's partnership with the DFO, ECCC and Parks Canada in B.C. to manage a conservation area co-owned by the council of the Haida Nation. Despite these successes, NCC has highlighted opportunity for further collaboration through:

i. Input and collaboration in the development of Natural Area Conservation Plans
ii. Development of funding proposals and multi-partner plans
iii. Input and partnership on landscape scale collaborations (ex. Priority Places)
iv. Data sharing for conservation prioritization, transboundary data provision and to support work on water quality, quantity, resilience and protection of habitat for Canada's freshwater species
v. Climate resiliency mapping

NCC's expectation of the agency is that it will act as consolidator for freshwater conservation issues and initiatives. NCC expects to engage with this agency in the same fashion as the Canadian Wildlife Service but with an increased scope to better incorporate additional freshwater issues such as water quality, headwater and aquifer protection and wetland conservation and protection. NCC hopes to look to this group as a national leader for freshwater spatial datasets and inventories.

Freshwater Legislation, Policies, and Regulation

Through NCC's freshwater initiatives, gaps in the current federal freshwater legislation, policies, and regulations and/or initiatives have been identified. These include:

i. Lack of a publicly available national freshwater inventory datasets
ii. Lack of federal transboundary legislation/policy
iii. Inadequate legislation/initiatives to protect receiving waterways and the Great Lakes from non-point source runoff
iv. Onerous procedures in regulatory policy for the conservation and stewardship of waterbodies

Collection of Information and Data

Data deficiency and the lack of accessibility and standardization of data from the federal government on freshwater resources present challenges for freshwater conservation initiatives taken by conservation organizations. Currently, and most pressing, is the issue of the lack of available data, particularly for wetlands. Hydrological datasets are often incomplete and gauge data can be difficult to collate over time. As well, many datasets are outdated or reactionary. The lack of standardization and accuracy across jurisdictions further adds to the challenge of utilizing this data.

We currently lack comprehensive species inventory data for freshwater systems, both in terms species occurrence and abundance. Without this information, conservation efforts can't fully incorporate information of freshwater biodiversity present in an area of interest.

We currently lack comprehensive and spatially explicit information barriers and flow impediments, which poses a challenge for conservation efforts in connected freshwater systems. If barriers aren't comprehensively mapped, stream systems might seem functionally connected, even though they are not due to an existing barrier.

An effort has been made to estimate the potential role of pollution in the decline of species at risk in Canada (McCune et al. 2019), but the data coverage on pollution sources and effects on the Canadian landscape is low. Substantial improvements on mapping pollution sources (and effects) are an important component to more effectively protect biodiversity in Canada. In the study, the authors tried to map "Household Sewage and Urban Waste Water", "Industry and Military Effluents", and "Agricultural and Forestry Effluents". None of these datasets that are currently available allow for direct mapping and quantification of pollution. As an example, as a proxy for "Agricultural and Forestry Effluents" they used Canada's Land Inventory dataset that identifies "Prime Agricultural Land". No quantification or estimation of chemical nutrient or pesticide loads and runoffs were possible.

A finer resolution, Canada specific database similar to the HydroSHEDS (https://www.hydrosheds.org/page/hydrobasins) effort would also be desirable. The current ~500m pixel resolution is too coarse to comprehensively represent all of Canada's small freshwater features. Producing such a database that includes discharge information and directionality would allow for better quantification of water volumes present in watersheds across the country.

A Canada specific database on water occurrence over time, water occurrence change intensity, water seasonality and annual water recurrence similar to the global surface water effort (https://global-surface-water.appspot.com/map) would also be beneficial in Canada.

Consequently, NCC recommends that an accurate, updated national standard inventory of freshwater resources be created, complete with high resolution hydrological datasets which include online maps, aquatic barriers, flow direction and topology data. Further, a wetland inventory should be made available which includes forested wetlands smaller than one acre. Providing proactive data availability, sharing and renewal is imperative to improving data accessibility and collaborative conservation moving forward.

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Summary of Recommendations for Federal Government

1. Creation of updated and standardized publicly available national inventory datasets
2. Increased monitoring of hydrological data across Canada
3. Increase funding opportunities and scope of freshwater initiatives to include biodiversity targets and to support further freshwater modelling and research
4. Increase consideration of nature-based solutions for watershed and ecological resilience in conservation (ecosystem focus, in addition to people/urban focusses).

With access to more freshwater than most of the world, we hope Canada can position itself as a world leader in promoting the conservation and value our freshwater resources. NCC commends this collaborative initiative taken by the federal government for freshwater protection in Canada and thanks you for your consideration of the recommendations presented in this brief.

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