

I. ISSUE

Fish populations are in trouble across the country. Less than a third of Canada's marine stocks can confidently be considered healthy,¹ while habitat loss and fragmentation is a significant problem in most major watersheds.² As climate change intensifies and existing water resources are strained by increasing demand, changes are needed to better protect fish and fish habitat.

Environmental flows are an important piece of the puzzle. Environmental flows are critical to fish and all aquatic life, widely recognized by scientists as the 'master variable' for ensuring the health of freshwater ecosystems. The most widely accepted definition of environmental flows puts their importance into clear relief:

“Environmental flows describe the quantity, timing, and quality of freshwater flows and levels necessary to sustain aquatic ecosystems which, in turn, support human cultures, economies, sustainable livelihoods, and well-being.”

Flows are a fundamental part of fish habitat. This seems self-evident – fish need water – yet protection of fish habitat has historically focused on areas of sand, rock, gravel or aquatic vegetation used by fish for spawning and feeding grounds, not on the quality and amount of water available.⁴

Different levels of government are responsible for different aspects of water management. This is not the problem – the problem is that, historically, there has not been enough consideration of how these different management functions collectively affect environment flows. Securing the flows needed to ensure fish passage and protect fish and fish habitat is a key part of a holistic, whole-of-ecosystem approach to fisheries management.

II. PROGRESS UNDER THE FISHERIES ACT

Amendments to the *Fisheries Act* in 2019 strengthened provisions for protecting environmental flows needed for the passage of fish and the protection of fish and fish habitat. Specifically, section 34 of the Act identifies two tools – Minister's orders and regulations – related to addressing flow needs.

Section 34.3(2) lists a number of reasons that the Minister may make **orders** concerning the operation or construction of an obstruction or thing, including to maintain flows that are needed to “permit the free passage of fish” and that are “sufficient for the conservation and protection of the fish and fish habitat”.

Further, Section 34.3(7) enables the Minister to make **regulations** “respecting the flow of water that needs to be maintained for the passage of fish and the protection of fish or fish habitat.”

1. Oceana Canada, “Fishery Audit,” 2019, <https://fisheryaudit.ca/>

2. World Wildlife Foundation Canada, “A National Assessment of Canada's Freshwater: Watershed Reports,” 2017, <http://conservationontario.ca/policy-priorities/science-and-information-management/watershed-reporting/>.

3. Angela H. Arthington et al., “The Brisbane Declaration and Global Action Agenda on Environmental Flows (2018),” *Frontiers in Environmental Science* 6, no. JUL (2018): 1–15, <https://doi.org/10.3389/fenvs.2018.00045>.

4. Atlantic Salmon Federation et al., “Sustaining Healthy Fisheries, Waters and Economies: Submission to the Senate Standing Committee on Fisheries and Oceans (POFO) on Bill C:68: An Act to Amend the Fisheries Act and Other Acts in Consequence,” 2019, <https://poliswater-project.org/files/2019/03/Bill-C68-submission-feb2019.pdf>.

III. THE OPPORTUNITY: ENACT ENVIRONMENTAL FLOW REGULATIONS

The amendments introduced in the 2019 *Fisheries Act* provide a clear legislative basis for the federal government to address concerns and recommendations of the scientific community. A 2013 report by the Department of Fisheries and Oceans (DFO) Canadian Science Advisory Secretariat identifies the lack of federal guidelines for determining environmental flows in Canada as producing “a situation where fisheries resources, fish habitat and the supporting freshwater ecosystems may not be consistently protected across Canada.”⁵ This conclusion has been widely supported by the water science and policy communities. During consultation on *Bill C-68, An act to amend the Fisheries Act and other Acts of consequence* in 2016-17, numerous submissions to the House of Commons and Senate Standing Committees on Fisheries and Oceans supported the introduction of environmental flow provisions in the updated *Fisheries Act*.⁶

The federal government has an important role to play working with provincial/territorial governments to ensure their water policies, laws, and programs consistently and effectively address the water needs for fish passage and protection of fish and fish habitat. Environmental flow protections at the provincial/territorial level are essential, but a patchwork of uneven and inconsistent protections is not enough to ensure protection for fish. The federal government is best suited to help strengthen environmental flow protections through areas of clear federal jurisdiction, such as the management of domestic and international transboundary watersheds and ensuring that Indigenous rights and interests are properly represented.

The regulation-making provision in section 34.3(7) of the *Fisheries Act* is an opportunity to strengthen and clarify the federal role in ensuring the flows needed for fish passage and protection of fish and fish habitat across Canada. It is also an opportunity to enhance collaboration with provincial/territorial and Indigenous governments by developing regulations that respect shared jurisdiction over water and aquatic ecosystems. Regulations will achieve tangible outcomes in watersheds across the country by ensuring that protections for fish no longer fall through the cracks of shared water management systems.

Regulations can address long-standing concerns with existing approaches. For example, they can clarify when and how to use Ministerial orders which currently are rarely used and are often only implemented after a time-consuming, expensive, and confrontational process.⁷ And they can strengthen and reinforce implementation of policies that are inconsistently applied and lack enforcement mechanisms.⁸

The following sections propose key outcomes and considerations to guide development of regulations under section 34.3(7) of the *Fisheries Act*.

5. T. Linnansaari et al., “Review of Approaches and Methods to Assess Environmental Flows across Canada and Internationally,” *Canadian Science Advisory Secretariat*, 2013, www.dfo-mpo.gc.ca/csas-sccs/.

6. See “Submission on Bill C68: An Act to amend the Fisheries Act and other Acts in consequence”, <https://www.ourcommons.ca/Content/Committee/421/FOPO/Brief/BR9868789/br-external/ForumForLeadershipOnWater-Joint-e.pdf>.

7. Linda Nowlan, “CPR for Canadian Rivers - Law to Conserve, Protect, and Restore Environmental Flows in Canada,” *Journal of Environmental Law and Practice*, 2012, 237–86, <https://www.researchgate.net/publication/295921060>.

8. Anne Muter and Linda Nowlan, “Environmental Sector Expectations for an Environmental Flow Needs Regulation,” 2015, https://poliswaterproject.org/files/2015/11/SoE-for-WSA-regs_EFN_November-2015.pdf.

IV. KEY OUTCOMES

The development of regulations under section 34.3(7) of the *Fisheries Act* should be led by DFO and informed by collaboration with different levels of government, Indigenous Nations, and relevant stakeholders. While this process would determine the detailed content of the regulations, the regulations should accomplish, at least, the following five key outcomes:

1. Define “flow of water”

The regulations should clearly define what is meant by “flow of water” in section 34.3 of the *Fisheries Act*. This definition should align with the widely accepted Brisbane Declaration definition of environmental flows by including reference to the “quantity, timing, and quality of freshwater flows and levels necessary to sustain aquatic ecosystems”.⁹

2. Clarify application

The regulations should incorporate clear language to ensure that sufficient flows are maintained to ensure fish passage and the protection of fish and fish habitat. This means explicitly stating *when* and by *what means* the Minister is to secure the water flows needed to ensure fish passage and protect fish and fish habitat.

3. Establish standards and guidance

The regulations should set standards for determining environmental flow thresholds for fish passage and the protection of fish and fish habitat. There isn't a one size fits all approach for determining environmental flows. Nonetheless, it is important that the regulations embed clear standards that are evidence-based and that incorporate both Western science and Indigenous knowledge systems. The standards should be flexible enough to be applied differently in different contexts but should be based on the best available methods and knowledge.¹⁰ The regulations should also provide guidance for DFO to work with other levels of government and watershed authorities to ensure they have the information and tools needed to meet the standards.

4. Integrate water flows for fish into watershed planning

While it is a scientific concept, ensuring adequate flows ultimately depends on the social, economic, and political will of water users.¹¹ Regulations under the *Fisheries Act* can help integrate the water flows needed for fish passage and fish and fish habitat into broader watershed and regional planning frameworks. This is particularly important in transboundary watersheds that cross multiple jurisdictions, both within Canada and across the U.S. border.

5. Monitoring and management

Good data is crucial to ensure environmental flows are protected. In instances where flow alterations are authorized, the regulations should establish monitoring and reporting requirements to ensure there is reliable data for assessing and enforcing flows. This data will contribute to adaptive planning and management processes. In instances in which sufficient data does not exist, flows should be managed according to the precautionary principle.

9. Arthington et al., “The Brisbane Declaration and Global Action Agenda on Environmental Flows (2018).”

10. Arthington et al.

11. J. O’Keeffe and T. L. Quesne, “Keeping Rivers Alive: A Primer on Environmental Flows and Their Assessment,” 2009, http://assets.wwf.org.uk/downloads/keeping_rivers_alive.pdf.

Case Studies: Environmental Flow Management

Many national and sub-national governments have environmental flow protection laws.¹² Below are just two examples of many that could help inform the development of environmental flow regulations under the *Fisheries Act*.

British Columbia's *Water Sustainability Act*¹³

Section 15 of the *Water Sustainability Act*, brought into force in 2016, requires decision makers to consider the “environmental flow needs of a stream” when making decisions regarding the diversion or use of water from a stream or aquifer connected to the stream. Sections 86-87 also outline protections for critical environmental flows. These provisions of the *Water Sustainability Act* are supported by B.C.'s Environmental Flow Needs Policy,¹⁴ which provides guidance to help decision makers assess the risk to environmental flows and make consistent water allocation decisions. While environmental flows are not enshrined in provincial regulations, B.C. provides a good starting point for ensuring coordination between federal and provincial flow regulations for the protection of fish and fish habitat.

Australia's *Water Act*¹⁵

Australia passed the *Water Act* in 2007 to coordinate a national approach to water management and meet the challenges facing water management in the country's Murray-Darling Basin. The Act allows states to protect “planned environmental water” through law or water management plans. Planned environmental water, which is equivalent to environmental flow, is water that is needed for achieving environmental outcomes. The *Water Act* mandates that water designated as planned environmental waters cannot “be taken or used for any other purpose”.

V. KEY CONSIDERATIONS

Introducing regulations via section 34.3(7) of the *Fisheries Act* is an important step toward protecting fish populations in the face of intensifying climate change and increasing pressures from resource extraction, population growth, and pollution. Broader considerations must be taken into account as regulations are developed. Three key considerations are identified below.

First, environmental flow standards should be harmonized across different levels of governments as much as possible. Jurisdiction over the water flows that are central to fish passage and protection of fish and fish habitat is shared between different levels of government, with provincial/territorial governments largely responsible for regulating water use and withdrawals. Indigenous governments, meanwhile, are increasingly assuming a larger role in decision-making over water in their territories. Each level of government has a role to play, and harmonization across each level of government is important to ensure consistent protections.

12. See Linda Nowlan, Presentation on Environmental Flow Law in WWF Workshop report, 2011, listing these laws: Switzerland Federal Law on Water Protection, South Africa National Water Act, Australia Commonwealth Water Act, New South Wales Water Management Act No. 92 of December 2000, Scotland Water Environment and Water Services Act EU Framework Directive on Water, Water Environment (Water Framework Directive) (England and Wales) Regulations 2003, Chile Law No. 20.017 of 11 May 2005 (amending the Water Code), at Art. 129bis, Nicaragua Resolutions of the National Environmental Authority No. 0127-2006 6, Mozambique Decree of the Council of Ministers No. 43/2007, Israel Water Law of 1959, amended 2004, Mexico Environmental Flows National Standard, Japan River Law, Spain 2007 Water Planning Decree, Kenya Water Act 2002.

13. *Water Sustainability Act*, SBC 2014, c. 15.

14. Government of British Columbia, “Environmental Flow Needs Policy,” 2016, <https://doi.org/10.1017/CBO9781107415324.004>.

15. *Water Act 2007*, No. 137, 2007 (Australia).

Second, connections between environmental flow regulations under the *Fisheries Act* and other aspects of fisheries and water management are important. Environmental flow regulations can and should align with and support regional and watershed-based planning processes. The regulations can also contribute to decision-making under other sections of the *Fisheries Act*. For instance, under section 34.1 there are a number of factors that the Minister must consider when authorizing a project that may impact fish habitat, including the cumulative effects of the project. Environmental flow regulations would help contribute to assessing and addressing cumulative effects.

Third, a new Canada Water Agency could play a key role in helping implement environmental flow regulations under the *Fisheries Act*. The Agency, which the federal government is committed to establishing, could help bring together different levels of government and ensure harmonization between various flow regulations across the country. This is the exact type of multijurisdictional policy issue that the Agency will be designed to address.

VI. RECOMMENDATIONS

We recommend that DFO move expeditiously to develop regulations under section 34.3(7) of the *Fisheries Act*. These efforts should be undertaken in close collaboration with Indigenous, provincial, and territorial governments. They should also be guided by the knowledge and expertise of the water science and policy communities. The established, extensive body of knowledge on environmental flows provides a good starting point, but ongoing engagement is needed to ensure the regulations are done right.