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WHAT IF A RIVER RUNS THROUGH IT? WATER FLOW AS HABITAT IN THE NEW FISHERIES ACT

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A new definition in Bill C-68, the new Fisheries Act (the "Act"), has the potential to significantly broaden the Act's concept of "fish habitat". As mentioned in a previous article, the Standing Committee on Fisheries and Oceans recommended adding the concept of water flow to the definition of "fish habitat" by inserting the following provision prior to the third reading of the Bill:

> **Deeming - habitat**
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> (2) For the purposes of this Act, the quantity, timing and quality of the water flow that are necessary to sustain the freshwater or estuarine ecosystems of a fish habitat are deemed to be a fish habitat.

Bill C-68 is currently before the Senate Standing Committee on Fisheries and Oceans, and includes this provision. This article addresses why the above provision was inserted into Bill C-68 and what the implications of this change might be if it remains in Bill C-68 following Senate committee review.

First, the "why". The above provision, which, for the purposes of this article, will be called the "deeming provision", has its genesis in a broader concept known as "environmental flow". The Canadian Science Advisory Secretariat has adopted the below definition, endorsed at the 2007 International River Symposium held in Brisbane Australia:

Environmental flow describes the quantity, quality and timing of water flows required to sustain freshwater ecosystems and the human livelihoods and well-being that depend on these ecosystems.[1]

A number of witnesses at the committee stage of Bill C-68, advocated for the inclusion of

environmental flows somewhere in the Act, including West Coast Environmental Law, Ecojustice, Oceana Canada, and the Tsleil-Waututh.

Notably, though the deeming provision might suggest otherwise, environmental flow does not necessarily require or imply a pristine aquatic ecosystem, devoid of human use. Rather, the concept of environmental flow presumes a variety of uses. As the International Union for the Conservation of Nature notes:

> Intuitively, it might seem that all of the natural flow, in its natural pattern of high and low flows, would be needed to maintain a near-pristine ecosystem. Many ecologists believe, however, that some small portion of flow could be removed without measurable degradation of the ecosystem. How much could be removed in this way is more difficult to assess, with estimates ranging between about 65% and 95% of natural flow having to remain, with the natural patter of flow also retained. Once flow manipulations move past this, then river ecologists can advise on patterns and volumes of flows that will result in a range of different river conditions. This information can then be used to choose a condition that allows an acceptable balance between a desired ecosystem condition and other social and economic needs for water. The flows allocated to achieve the chosen condition are the environmental flow.[2]

Concern about maintaining environmental flows reflects the reality that many of Canada's aquatic systems are under increasing pressure from human activity, and that water is not an unlimited resource. From an environmental-protection perspective, the benefit of an environmental flow approach is that it is inherently holistic. Considering environmental flows involves thinking about the total health of a water body and attempts to account for the total effect of individual water uses on the system as a whole.

However, while it is easy to understand that a certain level of water flow (or indeed, a seasonal variability of flow) is environmentally necessary, it is not as easy to "operationalize" the concept. What, for example, is a dam operator or industrial user of water to do in order to maintain the environmental flow of the waterway they benefit from? Many water users alter flows daily, simply by nature of their operations.

Equally there are issues in determining the appropriate environmental flow. As it stands, there is no single, federally-mandated methodology to determine what the appropriate or required environmental flow is in a given waterway. Various methodologies to assess the appropriate flow exist. The World Wildlife Fund suggests that there are over 200 methodologies to determine environmental flow globally, reflecting in part the variety of water resources being assessed.[3] The Department of Fisheries and Oceans, through the

Canadian Science Advisory Secretariat, has assessed a number of these methodologies.[4]

Bill C-68, as it stands, does not mandate how the appropriate or required environmental flow is to be established for the purpose of the deeming provision. For dams and fishways, this might be done by regulation, given the Ministerial power at s. 34.3(7) to "make regulations respecting the flow of water that is to be maintained to ensure the free passage of fish or the protection of fish or fish habitat." However, it is not yet clear what guidance will apply to restrict or limit other types of water use for the purposes of their operations. Consumptive use, for example, has a different effect on environmental flow than obstruction or temporary diversion of water.[5]

Nevertheless, the variability of environmental flows means that regulations will likely be unable to clearly mandate what must be done by individual users. Instead, it is likely that a case-by case approach will be required. This is because optimal environmental flows vary depending on the water in question. For example, perennial rivers (those that flow all year) do not have the same characteristics as seasonal rivers that flow only at certain times of year (such as during the spring freshet).[6] Given that the environmental flow for a given river system is individual to that system, and given that different uses may affect flow differently, it is unlikely that appropriate environmental flows will be easily established by general regulation. Instead, it will be necessary to establish the flow for the specific system in question.

Without guidance, it is not yet clear what types of alteration of flow are permissible and what might require authorization by the Ministry as an alteration of fish habitat for the purposes of the new Act. Further, it is likely that what one user does on a waterway with respect to flow will impact another potential user's ability to use water. This means existing uses of a waterway and their impact on environmental flow will have to be assessed when determining whether a future use of that waterway is appropriate or approvable. Guidance is required from the DFO on these points, either through regulation or policy-making.

Guidance is also required to understand how users' obligations to maintain environmental flows relate to their obligations under provincial water regimes, such as the Ontario Water Resources Act. Permits to take water under the Ontario Water Resources Act, for example, often take into consideration appropriate water flow and the health of upstream and downstream environments. Water uses will require coordination between provincial and federal authorities to ensure that the regulatory burden is not duplicated between regimes.

While including flows in the definition of fish habitat represents a significant change to the Act, considering flow as part of habitat is not new. The previous Act's prohibition of killing fish (former s. 32) and prohibition of harmful alteration or destruction of fish habitat (former s. 35) already indirectly contemplated the concept of maintaining ecological flow.

Case law bears this out. For example, Rio Tinto Alcan Inc. was successfully prosecuted under both of these sections of the former Act when, acting on what it perceived to be DFO authorization, Rio Tinto initiated an emergency ramp-down of water flow past its dam in the Kemano river. It did so in order to allow B.C. Hydro to conduct urgent infrastructure repairs.[7] The court found that this rapid decrease in river flow had deleterious impact on salmon fry (juvenile salmon) in the river.

Given that Bill C-68, in its current form, returns the s.35 prohibition on harmful alteration damage or destruction of fish habitat to the Act. If Bill C-68 is approved in its current form, then interference with flow that impairs habitat will, once again, constitute an offence. It remains to be determined whether any guidance will be provided through regulation or DFO policy. If Bill C-68 in its current form comes into effect, then in the event of a prosecution, water users who may be charged under the new s. 35. Those who are charged and who seek to make out a due diligence defence will be well-served to understand the hydrological conditions of the watercourse within which they operate. Water users in general would benefit from clear DFO guidance on what must be done to maintain environmental flows.

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1 Canadian Science and Advisory Secretariat, Research Document 2012/039: Review of approaches and methods to assess Environmental Flows across Canada and Internationally, by T Linnansaari, W A Monk, D J Baird and R A Curry, (Ottawa: Fisheries and Oceans Canada, 2012) at 3 ["CSAS Report"].
2 International Union for the Conservation of Nature and Natural Resources, Flow: The Essentials of Environmental Flows, by Megan Dyson, Ger Bergkam, John Scanlon eds, (Switzerland, International Union for the Conservation of Nature and Natural Resources, 2008) at 17.
3 World Wildlife Fund, Keeping Rivers Alive: A Primer on Environmental Flows and Their Assessment, Jay O'Keefe and Tom Le Quesne eds (World Wildlife Fund, 2009), at 21.
4 See, generally the CSAS Report.
5 CSAS Report, at 2.
6 CSAS Report, at 2.
7 R v Rio Tinto Alcan, 2017 BCCA 440.

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