



## **The Integrated Modelling Program for Prediction and Management of Change in Canada's Major River Basins (IMPC)**

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Canada's landscapes, ecosystems and water face major impacts due to climate change and economic development. Canadian river basins are largely dominated by cold climates and so are particularly sensitive to the impact of warming temperatures on snowmelt, permafrost thaw and glacier retreat, in addition to altered patterns of precipitation and impacts of changing land use. Many river basins are subject to substantial human interventions such as dams and irrigation networks, which along with industrialization and urbanization have significantly affected water quantity and quality as population and economy have grown in recent decades.

In this presentation, we introduce a recently launched project that aims to address the predictive needs of these problems using a transdisciplinary, holistic, and integrated modelling approach. The Integrated Modelling Program for Canada (IMPC) aims to develop a pan-Canadian integrated modelling platform to diagnose, simulate, and predict interactions amongst natural and human-driven components of water resources, and to deliver decision-making tools and solutions. IMPC is grounded in a new paradigm for knowledge mobilization and user engagement that seeks to bring together groups of knowledge producers (atmospheric science, hydrology, social science, computer science, and economics) and knowledge users (local, private, and governmental) to facilitate a knowledge co-creation strategy that can more effectively address outstanding local- to national-scale water management challenges.

We provide an overview of IMPC main objectives and research themes, the program structure, and its sub-projects and deliverables. IMPC is part of the Global Water Futures (GWF) initiative, a large pan-Canadian transdisciplinary research program led by the University of Saskatchewan in partnership with University of Waterloo, McMaster University and Wilfrid Laurier University.