

Field	Response
1. Contact Information Name	Peter Huck
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1. Contact Information University	University of Waterloo
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2. Please indicate the alignment of your research expertise to one or more of the following GWF objectives/ deliverables:	<p>Inform adaptation to change and risk management – propose governance mechanisms, management strategies, and policy tools to reduce the risk of water threats, design adaptive strategies, and enhance economic opportunities</p>
3.1 Please indicate the alignment of your research expertise to the GWF Science Pillar 1 – Diagnosing and Predicting Change in Cold Regions:	<p>Human–Water Systems – address the human dimensions that will determine water futures, including governance, policy, communities, border, and water resources management</p> <p>Water and Health – determine how changes to climate, extreme events, hydrology and water quality will affect human health in urban, rural and Indigenous communities</p>
3.2 Please indicate the alignment of your research expertise to the GWF Science Pillar 2 – Developing Big Data and Decision Support Systems:	
3.3 Please indicate the alignment of your research expertise to the GWF Science Pillar 3 – Designing User Solutions:	<p>Urban and Rural Communities</p> <p>Indigenous Communities</p> <p>Government and Governance</p>

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4. Please indicate the alignment of your research expertise to one or more of the following user needs:	<p>Risk reduction and analysis tools, including forecasts of floods, droughts, wildfires, and freezing rain (and other weather and climate extremes); water quality assessments; disease risk analyses; and integrated assessments. These tools alert industry and government to potential problems and allow cost/benefit analyses for potential risk mitigation.</p> <p>Complex system modeling and analyses reflect the growing awareness of interacting dynamics in human–natural coupled systems. These studies emphasize the inter–relationships between water resources and transportation systems, infrastructure, energy generation, mining, food production, and source water protection. Knowledge mobilization for decision support, including the facilitation of communities of practice, stakeholder engagement with science, visualization and Decision Theatres, development of place–based solutions for climate adaptation, and evidence–based decision making.</p>
5. Please list regions of Canada and the biomes (e.g. mountains, boreal forest, Great Lakes–St Lawrence), watersheds, and/or river basins where you are interested in conducting research for GWF:	Open at this point

Field

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6. Please list any other expertise or recent experience (subjects, river basins, technology) not covered by above query that could help us in assessing your alignment with the GWF programme:

I lead an IRC in Water Treatment, which has 17 partners. The focus of the research is on municipal/community water treatment and supply. Significant and rapid changes in source water quality because of extreme hydrologic events can severely challenge existing water supply infrastructure, such as treatment plants. Going forward, public health protection will be strengthened by a regulatory framework that is able to assess these risks for a given location and an approval process that requires incorporation of appropriate mitigation measures in the physical infrastructure. Thus being able to couple water quality predictions for extreme events with rigorous assessments of the ability of various treatment processes to cope with these events is crucial.