

Field	Response
1. Contact Information Name	Heidi Swanson
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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:	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
3.1 Please indicate the alignment of your research expertise to the GWF Science Pillar 1 – Diagnosing and Predicting Change in Cold Regions:	Water Quality and Aquatic Ecosystems – improve understanding and prediction of how climate changes in climate, hydrology, and land use impact water quality and the health of aquatic ecosystems Water and Health – determine how changes to climate, extreme events, hydrology and water quality will affect human health in urban, rural and Indigenous communities
3.2 Please indicate the alignment of your research expertise to the GWF Science Pillar 2 – Developing Big Data and Decision Support Systems:	Decision Support Systems – predictive and diagnostic modelling system development and deployment for hydrology, water quality and water resources
3.3 Please indicate the alignment of your research expertise to the GWF Science Pillar 3 – Designing User Solutions:	Water Environment – ecosystem health and conservation, water management Indigenous Communities

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<p>4. Please indicate the alignment of your research expertise to one or more of the following user needs:</p>	<p>Projects to improve environmental monitoring, including sensors, drones, satellites, river basin observatories, lake buoys, software development, chemical fingerprinting, real-time monitoring, citizen science, and integration of Big Data platforms for Cold Region water science. 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. Merging Indigenous traditional knowledge with science for more effective climate adaptation, risk management, water governance, and sustainable development. Studies of environmental change and long-term, generational impacts of economic development on First Nations ecosystems and water resources.</p>
<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:</p>	<p>Northwest Territories, Yukon, Nunavut (most of my current research), Great Lakes</p>
<p>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:</p>	<p>I have significant expertise in working with First Nations and Inuit communities and groups, in community-driven research, and in working in remote environments. My research expertise lies in contaminant accumulation (and drivers of spatial variability in contaminant accumulation) in northern aquatic ecosystems.</p>