Field	Response
1. Contact Information | Name	John P. Giesy
1. Contact Information | Department	Veterinary Biomedical Sciences and Toxicology Centre
1. Contact Information | Email	John.Giesy@usask.ca
1. Contact Information | University	University of Saskatchewan
1. Contact Information | Personal Web Page	http://www.usask.ca/toxicology/jgiesy/
1. Contact Information | Phone	306-966-2096
2. Please indicate the alignment of your research expertise to one or more of the following GWF objectives/ deliverables:	Improve disaster warning – develop scientific knowledge, monitoring and modelling technologies, and national forecasting capacity to predict the risk and severity of extreme events 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:	Big Data for Water – sensors, sensing, instrumented river basins, data analysis systems Decision Support Systems - predictive and diagnostic modelling system development and deployment for hydrology, water quality and water resources

Field	Response
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 Agriculture - including farming, food processing, country foods Energy & Natural Resources - including mining and hydroelectricity Other Industry - Including Insurance, Finance, Measurement and Engineering sectors Urban and Rural Communities Indigenous Communities Government and Governance
4. Please indicate the alignment of your research expertise to one or more of the following user needs:	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. 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. 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.

Field	Response
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:	Prairie lakes, rivers and reservoirs Lawrentian Great Lakes South and North Branches of the Saskatchewan River
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:	Monitoring of water quality Drinking water quality, treatment and risk benefit analysis Waste water quality, treatment and risk benefit analyses Restoration of contaminated sites and legacy mines Agricultural chemicals, fates and effects and relative risk benefit analyses Ecogenomics for monitoring water quality Aquatic Toxicology Risk assessment Environmental Chemistry--especially un-targeted analyses Remote sensing for water quality