



## Global Water Futures 2022 Annual Open Science Meeting

To be held online, May 16 – 18, 2022. Details are at [www.gwf2022.com](http://www.gwf2022.com)

### Theme: Knowledge to Action

- *Managing and governing water futures* – GWF research encompasses direct governance and management research as well as tools and models to support innovative water governance and management. Day 1 will focus on how GWF knowledge is/can be used towards changing approaches that better respond to climate change and the Sustainable Development Goals.
- *Water-related risk reduction* – GWF is actively generating knowledge, models, and tools, to reduce risks faced by ecosystems, various economic sectors, and individuals and communities. Risk reduction is a clear and critical knowledge to action pathway within GWF.
- *Harnessing data and knowledge to improve water practice* – GWF has invested in models, tools, apps, sensors, and scenarios. How are these being deployed to improve water practice and what other opportunities exist.

### Daily Meeting Structure

May 16. Day 1: Knowledge to Action: Towards Managing and Governing Water Futures		
Welcome and Opening (Chair: Corinne Schuster-Wallace)		
Time (CST)		
0900 – 0910	Elder Roland Duquette, Prayer and blessing	
0910 – 0920	Baljit Singh, GWF PI, opening remarks	
0920 – 0935	John Pomeroy, GWF Director, state and prospects of GWF	
10-minute break		
Plenary Session: Towards Managing and Governing Water Futures (Chair: Dawn Martin-Hill)		
0945 – 1005	Keynote speaker: Troy Brockbank, Pattle Delamore Partners, New Zealand <i>He puna wai, he puna tāngata – Placing wai/water at the centre of Aotearoa NZ's water future</i>	
1005 – 1025	Keynote speaker: Colleen Sklar, Winnipeg Metropolitan Region (WMR)	
1025 – 1045	Questions and discussion	
30-minute break		
Plenary Session: Our Waters This session will include a set of videos and panel discussions to share and learn about several water bodies ( <i>Redberry Lake, Grand River, and the Saskatchewan River Delta</i> ), the communities around them, and the issues they face through the eyes of Indigenous youth, Elders, and community members.		
	Chair: Monica Morrison	Chair: Lawrence Martz
1115 – 1215	<b>Our Waters: Redberry Lake</b> <ul style="list-style-type: none"> <li>• Anthony Johnston</li> </ul>	<b>Our Waters: Grand River</b> <ul style="list-style-type: none"> <li>• Dawn Martin-Hill</li> <li>• Christopher Martin</li> <li>• Denise McQueen</li> </ul>

				<ul style="list-style-type: none"> <li>• Makasa Looking Horse</li> <li>• Lori Davis Hill</li> <li>• Tony Vieira</li> </ul>	
1215 – 1315				<b>Our Waters: Saskatchewan River Delta</b> <ul style="list-style-type: none"> <li>• Gary Carriere</li> <li>• Nadina Gardiner</li> </ul>	
30-minute break					
High-level panels on the theme: Towards Managing and Governing Water Futures					
1345 – 1430	<b>High-level panel on Water Governance in a changing future</b> (How does water need to be governed in response to a changing water future? How does GWF research and tools support this? What needs to happen next?) Chair: Philip Loring Panelists: Deborah McGregor, Dustin Garrick, Leila Eamen, Graham Strickert				
1430 – 1515	<b>High-level panel on the Canada Water Agency, towards innovative water management</b> (What are the top 2-3 challenges facing Canada’s current water governance structures? What role/mandates does the CWA have to have in order to be a viable mechanism in a changing water future? What is the role of large research networks like GWF?) Chair: Emily Hines Panelists: Oliver Brandes, Merrell-Ann Phare, John Pomeroy, Michael Miltenberger				
1700 – 1800	GWF-YP Social Event (in-person smaller local gatherings organized by the YP executive council)				
<b>May 17. Day 2: Knowledge to Action: Towards Water-related Risk Reduction</b>					
Plenary Session: Towards Water-related Risk Reduction (Chair: Corinne Schuster-Wallace)					
0930 – 0950	Keynote speaker: Steve Burian, University of Alabama <i>CIROH: Cooperative Institute for Research to Operations in Hydrology</i>				
0950 – 1010	Keynote speaker: Darcy Peter, Woodwell Climate Research Center <i>Meaningful research for meaningful impact: Arctic researchers and Indigenous communities working together to combat global climate change</i>				
1010 – 1030	Keynote speaker: Fabrice Renaud, University of Glasgow <i>Key factors to increase acceptance of nature-based solutions to reduce risks from hydro-meteorological hazards</i>				
1030 – 1050	Keynote speaker: Nadia Joe, University of British Columbia				
10:50 – 11:15	Questions and discussion				
30-minute break					
Parallel Scientific Sessions:					
1145 – 1315	Human Dimensions - Impact and Management	Water Quality - General	Water Quality - Nutrients	Hydrology & Terrestrial Ecosystems – Model techniques	Hydrometeorology, Atmosphere & Extremes
30-minute break					

1345 – 1430	<b>High-level panel on extreme events and impacts in 2021</b> (Why is 2021 so important in Canada’s weather history? What do we need to learn from this moving forward? What needs to be done differently as a result of our 2021 experiences? What is the role of water research and does it change with these events?) John Pomeroy, Chair Panelists: Alejandro Di Luca, Simon Papalexiou, Cherie Westbrook			
1430 – 1515	<b>High-level panel on risk reduction including human, ecological and economic elements</b> (What are the priority risks that need to be managed? How does GWF research support risk reduction? What do we need to consider when developing tools and models to support risk reduction?) Chair: Roy Brouwer Panelists: Lalita Bharadwaj, Merrin Macrae, Pat Lloyd-Smith, Gary Carriere			
1700-1800	GWF Family-friendly social event			
<b>May 18. Day 3: Knowledge to Action: Harnessing Data and Knowledge to Improve Water Practice</b>				
Plenary Session: Harnessing Data and Knowledge to Improve Water Practice (Chair: John Pomeroy)				
0930 – 0950	Keynote speaker: Jerad Bales, Consortium of Universities for the Advancement of Hydrologic Science <i>The value of open and reproducible data in water prediction</i>			
0950 – 1010	Keynote speaker: Mary Jane Johnson, Kluane First Nation <i>Life stories with water</i>			
1010 – 1030	Keynote speaker: Al Pietroniro, University of Calgary <i>Global Water Futures Advancements in hydrological modelling</i>			
10:30 – 10:50	Questions and discussion			
55-minute break + poster viewing and poster discussion rooms				
Parallel Scientific Sessions:				
1145 – 1315	Human Dimensions - Impact and Management	Aquatic Ecology	Hydrology & Terrestrial Ecosystems – Permafrost, Groundwater, Soil Moisture	Hydrology & Terrestrial Ecosystems – Model Developments and Applications
30-minute break				
1345 – 1430	High-level panel on advancing water management with science, and models (how far have we come in GWF since we started? What are the major accomplishments? How is science and models supporting and advancing water management?) Chair: Chris Spence Panelists: Julie Theriault, Philippe Van Cappellen, Martyn Clark, Dawn Martin-Hill, Lori Bradford			
1430 – 1515	High-level panel on using new sensors and datasets to improve water management (How are sensors improving water management? What are the critical contributions that GWF is making? What are some remaining gaps?) Chair: Nandita Basu Panelists: Ravi Selvaganapathy, Claude Duguay, Helen Baulch			
1515 – 1530	Conclusions and Closing (Chair: Chris DeBeer) Closing Remarks: Corinne Schuster-Wallace (Associate Director, GWF)			

	Closing Blessing: Elder Duquette
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**Parallel Scientific Sessions**

<b>Day 2 (May 17 2022)</b>		
<b>Human Dimensions - Impact and Management</b>		
<b>Chair: Mylène Ratelle</b>		
<b>Time (CST)</b>	<b>Presenter</b>	<b>Title</b>
1145 – 1155	Mylène Ratelle	Drinking water perception and consumption in sub-arctic Indigenous communities in the Northwest Territories and Yukon.
1155 – 1205	Mallory Drysdale	Determinants of Exposure for Lead, Cobalt, Manganese, and Hexachlorobenzene in Northern Canada
1205 – 1215	Kurt Belcher	First Nations Led Mental Health Recovery in the Face of Environmental Jeopardy
1215 – 1225	Dawn Martin-Hill	Knowledge Mobilization Through Haudenosaunee Pedagogies
1225 – 1235	Colin Gibson	Striving Towards Reconciliation through the Co-Creation of Water Research
1235 – 1245	Nancy Doubleday	Transformative Governance, Engagement & Equity for Action on Adaptive Water Futures
2-minute lightning talks		
	Victoria Gevaert	Lipid Adjusted Polychlorinated Biphenyl Levels in Arctic and Subarctic regions in Canada
	Calin Lazarescu	Contaminant Exposure and Levels of Lead in Northern Regions of Canada
	Vahid Aghaie	Adaptive Management of Coupled Human-Water Systems
	Mehran Ghavami	Harmful Algal Blooms (HABs) in Prairie lakes: Response Management Planning and Risk Communications
	Krysha Dukacz	Bridging Troubled Waters: Ten Progressive Best Practices to Strengthen Stewardship and Sharing of Water Science Data in Canada

<b>Day 2 (May 17 2022)</b>		
<b>Water Quality – General</b>		
<b>Chair: Georgia Peck</b>		
<b>Time (CST)</b>	<b>Presenter</b>	<b>Title</b>
1145 – 1155	Tia Jenkins	Where are the Microplastics Data to Support Water Quality Management and Environmental Policy?
1155 – 1205	Nan Zhang	Integrating biofouling sensing with fouling mitigation in a two-electrode electrically conductive membrane filtration system
1205 – 1215	Heidi Swanson	Understanding mercury cycling in subarctic lakes in the Dehcho region
1215 – 1225	Had Dhiyebi	Using Wastewater Based Epidemiology (WBE) to track the prevalence of SARS-CoV-2 and its variants of concern in municipality sewersheds.
1225 – 1235	Patrick Breadner	Partitioning behaviour of SARS-CoV-2 in wastewater

1235 – 1245	Ana Cardenas	Impacts of wastewater effluents and seasonal trends of emerging contaminant in water and sediments of two cold-region rivers
2-minute lightning talks		
	Blake Haskell	Passive sampling for the detection of SARS-CoV-2 RNA in a university residence wastewater system
	Serghei Bocaniov	Sensitivity of Lake Hypoxia to Atmospheric Physical Forcing: Exploring the First- and Second-order Effects of Air Temperature and Wind Speed Changes
	Erik Fréchette	Antifouling and Oxygen Permeability Properties of Zwitterionic Polymer Coatings for Long-Term Dissolved Oxygen Surface Water Monitoring
	Sara Packull-McCormick	Mercury Bioaccessibility in Raw and Cooked Tissue from Freshwater Fish Species from the Northwest Territories, Canada

<b>Day 2 (May 17 2022)</b>		
<b>Water Quality – Nutrients</b>		
<b>Chair: Maria Strack</b>		
<b>Time (CST)</b>	<b>Presenter</b>	<b>Title</b>
1145 – 1155	Mahyar Shafii	Phosphorus dynamics in urban sewersheds: speciation, bioavailability, and export
1235 – 1245	Sarah Kaykhosravi	A novel approach for regionalization of SWMM to data poor regions for the estimation of urban phosphorus loads
1155 – 1205	Serghei Bocaniov	Long-term (2003 – 2016) phosphorus net mass-balance analysis: Can in-lake processes explain the re-eutrophication of Lake Erie?
1215 – 1225	Emily Ury	Source or sink? Wetlands role in phosphorus management for improving water quality
1225 – 1235	Arisha Imran	Assessing the legacy effects of large-scale flooding in 2020 on hydro-limnological conditions of lakes in the Peace-Athabasca Delta (Alberta, Canada)
1245 – 1255	Julie Terry	Buffalo Pound Lake – A collaborative strategy to modelling a key water resource
1205 – 1215	Lamisa Malik	Legacy Phosphorus and Eutrophication in the Lake Erie Basin
1255 – 1305	Ruchi Bhattacharya	Windows into the Past: Lake sediment phosphorus trajectories act as integrated archives of watershed disturbance legacies over centennial scales
2-minute lightning talks		
	Erika A Burton	Optimizing environmental DNA detection protocols to generate fish presence data in remote freshwater systems
	Ali Reza Shahvaran	Long-term monitoring of algal biomass in Western Lake Ontario using remote sensing and in situ data

<b>Day 2 (May 17 2022)</b>		
<b>Hydrology &amp; Terrestrial Ecosystems – Model techniques</b>		
<b>Chair: Mohamed Ismaiel Ahmed</b>		

Time (CST)	Presenter	Title
1145 – 1155	Juliane Mai	Great Lakes Runoff Intercomparison Project (GRIP-GL)
1155 – 1205	Robin Thorne	Recommendations to enhance hydrological models for improved estimates of climate impacts on northern waters
1205 – 1215	Mohamed Ismaiel Ahmed	Towards more effective representation of the variable contributing area in hydrologic models: 1. Model specific approach
1215 – 1225	Kyle Klenk	Using actors to increase scalability and fault tolerance of SUMMA
1225 – 1235	Matthew Yang	Integration of Text and Geospatial Search for Hydrographic Datasets Using the Lucene Search Library
1235 – 1245	Hongren Shen	Time to Update the Split Sample Approach to Hydrological Model Calibration
<b>Hydrology &amp; Terrestrial Ecosystems - 2-minute lightning talks</b>		
	Lauren Bourke	Drivers of hydrological response for distinct wetland complexes in a high latitude alpine watershed.
	Haoyu Yin	The Influence of Weather Seasonality on Well Vulnerability in Cold Regions
	Brampton Dakin	The drying of the Arctic and active layer development: a case study from the Western Canadian Arctic
	Lejla Latifovic	The Impact of a Gypsy Moth Defoliation Event on Net Ecosystem Productivity in a Mature Deciduous Forest in Southern Ontario
	Jason Paul	Mapping thermokarst land systems
	Ariel Lisogorksy	A detailed look at Phosphorous accumulation in a 12-year old multi-cell bioretention system using sequential extractions
	Xin Tong	Assessment of Groundwater Flow Significance in Hydrologic Models
	Mohamed Ismaiel Ahmed	Multi-model Intercomparison Project on the Saskatchewan-Nelson-Churchill River Basin (Nelson-MiP)
	Nastaran Saberi	Uncertainty estimations for mapping lake ice using random forest on MODIS TOA reflectance data

<b>Day 2 (May 17 2022)</b>		
<b>Hydrometeorology, Atmosphere &amp; Extremes</b>		
<b>Chair: Yanping Li</b>		
Time (CST)	Presenter	Title
1145 – 1155	Manoj K. Nambiar	Comparison of different satellite-derived precipitation products over the Western Canada
1155 – 1205	Francis Zwiers	Attribution of Human influence on the complex November 2021 BC flooding event
1205 – 1215	Mohamed Ali Ben Alaya	An extreme value based likelihood ratio test to evaluate BCCAQv2's capability for downscaling and projecting future unprecedented precipitation extremes
1215 – 1225	Mostofa Kamal	Exploring the Dynamical and Thermodynamical Characteristics of Supercell Thunderstorms over the Canadian Prairies

1225 – 1235	Émile Cardinal	Climatology of and factors contributing to occurrences of near-0°C conditions at Terrace, British Columbia
2-minute lightning talks		
	Caio Ruman	Investigation of wet snow events leading to power outages over New Brunswick using convection-permitting simulations
	Alex Cebulski	New Observations on the Influence of Forest Structure on Sub-canopy Snow Accumulation
	André Bertoncini	Establishing Reflectivity-Snowfall Relationships for Different Hydrometeor Particle Size Distributions in the Fortress Mountain Snow Laboratory

<b>Day 3 (May 18 2022)</b>		
<b>Human Dimensions - Impact and Management</b>		
<b>Chair: Laila Balkhi</b>		
<b>Time (CST)</b>	<b>Presenter</b>	<b>Title</b>
1145 – 1155	Elisabeta Lika	Estimating the economic value of improving the ecological condition of the Saskatchewan River Delta ecosystem
1155 – 1205	Roy Brouwer	Willingness to pay for water quality improvements of the Great Lakes: A discrete choice experiment
1205 – 1215	Leila Eamen	Hydro-economic models for informing water management decisions – are we using the right modelling tools?
1215 – 1225	Nitin Singh	The human factor in seasonal streamflows across natural and managed watersheds of North America
1225 – 1235	Pouya Sabokruhie	2D Hydraulic model to examine water and sediment availability in an inland delta
1235 – 1245	Casey Clunas	The Canadian Centre for Climate Services: Climate information for managing water-related risks

<b>Day 3 (May 18 2022)</b>		
<b>Aquatic Ecology</b>		
<b>Chair: Younggy Kim</b>		
<b>Time (CST)</b>	<b>Presenter</b>	<b>Title</b>
1145 – 1155	Jennifer Lento	Understanding environmental flow needs in the Saskatchewan River basin
1155 – 1205	Mehdi Moslemi Aqdam	Understanding How Ecosystem Interactions Drive Fish Mercury
1205 – 1215	Levi Snook	Arctic Grayling Habitat Use and Limitations in the Kakisa River, NWT
1215 – 1225	Yuwei Xie	A passive eDNA sampling strategy for metazoan biodiversity assessment
1225 – 1235	Nathanael Harper	Evaluating eDNA metabarcoding primer sets in silico for characterization of vernal pool amphibian communities within the Grand River watershed
1235 – 1245	Sean McLay	Indications of benthic macroinvertebrate assemblage recovery following wastewater treatment upgrades

1245 – 1255	Laura K. Neary	Characterizing vulnerability of shallow ponds to climate warming across the whooping crane breeding range, AB/NWT: a new collaborative research program
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<b>Day 3 (May 18 2022)</b> <b>Hydrology &amp; Terrestrial Ecosystems – Permafrost, Groundwater, Soil Moisture</b> <b>Chair: Homa Kheyrollah Pour</b>		
<b>Time (CST)</b>	<b>Presenter</b>	<b>Title</b>
1145 – 1155	Arsh Grewal	Assessing diel hydrochemical patterns in a permafrost underlain alpine catchment.
1155 – 1205	Emily Ogden	Too much of a good thing: Permafrost thaw induces short term increase in vegetation productivity in the northwestern boreal forest
1205 – 1215	Ines Sanchez-Rodriguez	Snowmelt water partitioning in Seasonally Frozen Soils: Insights from field observations
1215 – 1225	Sara Lilley	Rapid, long-distance karstic flow of mountain groundwater: new discoveries in the Canadian Rockies
1225 – 1235	Magali F. Nehemy	Waking up thirsty: tree water use of snowmelt in a boreal forest
1235 – 1245	Yi Wang	How do vegetation, litter, bryophyte, and substrate soil affect evaporation in high-elevation wetlands? Evidence from various types of wetlands with contrast geographical settings in Canadian Rocky Mountain
1245 – 1255	Evan Wilcox	Exploring Variability in Thermokarst Lake Water Balances in the Inuvik-Tuktoyaktuk Region using Isotope Tracers

<b>Day 3 (May 18 2022)</b> <b>Hydrology &amp; Terrestrial Ecosystems – Model Developments and Applications</b> <b>Chair: Shervan Gharari</b>		
<b>Time (CST)</b>	<b>Presenter</b>	<b>Title</b>
1145 – 1155	Kevin Shook	Development of the Prairie Hydrology Design and Analysis Product (PHyDAP)
1155 – 1205	Zhe Zhang	Land Surface Modeling of Wheat Growth Dynamics in the Canadian Prairies – Current Representation and Future Climate Change
1205 – 1215	Phillip Harder	Improved Prediction of Crop Water Use in Cold Regions Agriculture using Coupled Models
1215 – 1225	Zhijia He	Modelling the effects of climate change on snowmelt, soil moisture and streamflow generation for the Canadian Prairies
1225 – 1235	Holly Annand	The influence of wetland management and climate change on the hydrology of an agricultural catchment in the Canadian Prairies
1235 – 1245	Chris Marsh	Large extent snowdrift-resolving snowpack simulations across the Canadian Cordillera
1245 – 1255	Okan Aygün	Predicting water futures in Central Asia using a Hydrological-Glaciological Land Surface Model



1255 – 1305	Apurba Das	Application of Machine Learning approaches in ice-jam flood forecasting and prediction
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<b>Poster Presentations</b>	
<b>Human Dimensions - Impact and Management</b>	
<b>Presenter</b>	<b>Title</b>
Ashleigh Duffy	Water Well Told: Storytelling and its part in source water protection
Mehraneh Ghavami	Harmful Algal Blooms (HABs) in Prairie lakes: Response Management Planning and Risk Communications
Victoria Gevaert	Lipid Adjusted Polychlorinated Biphenyl Levels in Arctic and Subarctic regions in Canada
Calin Lazarescu	Contaminant Exposure and Levels of Lead in Northern Regions of Canada
Blake Haskell	Passive sampling for the detection of SARS-CoV-2 RNA in a university residence wastewater system
Vahid Aghaie	Adaptive Management of Coupled Human-Water Systems
Krysha Dukacz	Bridging Troubled Waters: Ten Progressive Best Practices to Strengthen Stewardship and Sharing of Water Science Data in Canada
Jorge A. Garcia	Development of a Computable General Equilibrium Model for Hydro-Economic Analyses of the Canadian Economy
Tariq Deen	Assessing the impact of climate change on the McKenzie Creek in the Great Lakes Region
Gifty Attiah	Spatial trends and distribution of Surface Temperature and Ice thickness on Sub-arctic lakes using remote sensing and modelling
Graham McDowell	Foregrounding the human dimensions of hydrological change to improve adaptation outcomes
<b>Hydrology &amp; Terrestrial Ecosystems</b>	
Mohamed Ismaiel Ahmed	Multi-model Intercomparison Project on the Saskatchewan-Nelson-Churchill River Basin (Nelson-MiP)
Daniel Mutton	Analysis of coupled MESH-CLASSIC model performance in Canadian watersheds
Samah Larabi	A process-based sensitivity guided calibration of the VIC model
Zelalem Tesemma	Modelling highly disturbed basins: the Upper Columbia and Okanagan River Basins
Xin Tong	Assessment of Groundwater Flow Significance in Hydrologic Models
Xiang Huang	Thermal-hydraulic-mechanical-chemical modelling in a permafrost-affected groundwater system
Lauren Bourke	Drivers of hydrological response for distinct wetland complexes in a high latitude alpine watershed.
Brayden Ralph	Quantifying Groundwater Storage and Discharge in Alpine Environments
Yi Wang	Effects of microforms on the evaporation of peat-bryophyte-litter column in a montane peatland in Canadian Rocky Mountain

Brampton Dakin	The drying of the Arctic and active layer development: a case study from the Western Canadian Arctic
Cory Wallace	Impacts of tall shrub expansion on the hydrological dynamics of a low-arctic catchment
Jason Paul	Mapping thermokarst land systems
Haoyu Yin	The Influence of Weather Seasonality on Well Vulnerability in Cold Regions
kailong Li	Posterior-informed feature importance method for examining how large-scale climatic indices influence hydrological processes in Continental US
Fei Huo	Detection of climate change in terrestrial water storage from global weather patterns
Farbod Tabaei	The Carbon Exchange Dynamics of Young Temperate Coniferous Forests and its Response to Partial Thinning
Nastaran Saberi	Uncertainty estimations for mapping lake ice using random forest on MODIS TOA reflectance data
Nur Hussain	Remote sensing application for evapotranspiration and crop growth estimation in Corn and Grape fields in Southern Ontario
Ariel Lisogorksy	A detailed look at Phosphorous accumulation in a 12-year old multi-cell bioretention system using sequential extractions
Grant Jensen	Microbial Community Compositional Stability in Agricultural Soils During Freeze-Thaw and Fertilizer Stress
Danielle Green	The Effects of Winter Pulsed Warming and Snowmelt on Nitrogen Cycling in Agricultural Soils: A Lysimeter Study
Clement Alibert	Standardize experiments for microplastics migration in soils
Saraswati Saraswati	Comparing soil organic matter hydrolysis under variable temperature and moisture levels with isothermal calorimetry
Mehdi Ramezanzadeh	Impacts of Freeze-Thaw Cycles on Methanogenic Toluene Biodegradation: Experiment and Numerical Simulation
Christina Lam	Identifying methanogenic pathways using isothermal microcalorimetry
Lin Li	Mitigation strategies for sediment transport issues in the Saskatchewan River, river delta, and their management
Arash Rafat	Investigating Small-Scale Lake Ice Growth and Temperature Dynamics in two Canadian Subarctic Lakes
Alicia Pouw	Accuracy of snow depth estimation on Canadian sub-Arctic lakes using Ground-Penetrating Radar
Nicolas R. Leroux	Impact of different precipitation phase estimation methods around 0oC on snowpack evolution.
Bowen Zhou	Do bioretention cells reduce urban stormwater phosphorus and nitrogen loads? Insights from International Stormwater Best Management Practices Database
<b>Hydrometeorology, Atmosphere &amp; Extremes</b>	
Lejla Latifovic	The Impact of a Gypsy Moth Defoliation Event on Net Ecosystem Productivity in a Mature Deciduous Forest in Southern Ontario
Elizabeth Arango-Ruda	EFFECT OF EXTREME WEATHER EVENTS ON THE WATER FLUXES, ENERGY PARTITIONING, AND WATER-USE EFFICIENCY OF A EVERGREEN CONIFER FOREST IN SOUTHERN ONTARIO, CANADA

Hadleigh D. Thompson	A mixed-phase precipitation deployment of a Multi Angle Snowflake Camera
André Bertoncini	Establishing Reflectivity-Snowfall Relationships for Different Hydrometeor Particle Size Distributions in the Fortress Mountain Snow Laboratory
Yusof Ghiasi	Monitoring lake ice phenology from CYGNSS: Algorithm development and assessment using Qinghai Lake, Tibet Plateau, as a case study
Peter Wasswa	AN ASSESSMENT OF GRACE-BASED WATER STORAGE DEFICIT APPROACH FOR HYDROLOGICAL DROUGHT CHARACTERIZATION IN UGANDA
Alex Cebulski	New Observations on the Influence of Forest Structure on Sub-canopy Snow Accumulation
Caio Ruman	Investigation of wet snow events leading to power outages over New Brunswick using convection-permitting simulations
Daniel Betancourt	Seasonal and Spatial Changes in Hail Frequency and Associated Thermodynamic Mechanisms in WRF-HAILCAST Simulations
Yanping Li	High-Resolution Regional Climate Modeling and Projection over Western Canada using a Weather Research Forecasting Model with a Pseudo-Global Warming Approach
Xiaohui Zhao	Physical Response of the 2013 Alberta Flood Event to Global Warming
Xiao Ma	Investigation of the climatology of low-level jets over North America in a high-resolution WRF simulation
Zhenhua Li	A mixed approach to bias-correct convection-permitting regional climate simulation
<b>Water Quality &amp; Aquatic Ecosystems</b>	
Serghei Bocaniov	Sensitivity of Lake Hypoxia to Atmospheric Physical Forcing: Exploring the First- and Second-order Effects of Air Temperature and Wind Speed Changes
Riley Mills	Flow-Through Reactor Experiments to Inform Modelling of Transport and Retention Processes for Particulate Organic Matter in Riverbeds
Michael Dallosch	Lake Ice as a Predictor of Algal Biomass in North American Great Lakes
Emil Sekerinski	Re:mote – Open-source Software and Low-cost Hardware Infrastructure for Water Quality and Tracking
Erik Fréchette	Antifouling and Oxygen Permeability Properties of Zwitterionic Polymer Coatings for Long-Term Dissolved Oxygen Surface Water Monitoring
Xiaowen Ji	Application of in situ diffusive gradients in thin-films technique in the laboratory and the field to investigate desorption kinetics of psychoactive drugs in sandy sediment
Tori Grootjen	Quantifying the role of reservoirs in altering phosphorus dynamics using a combination of data analysis and process modeling
Meghan McLeod	Nitrogen Legacies in the Transboundary Lake Erie Basin
Jovana Radosavljevic	Effects of Salinization on lake stratification and nutrient cycling: a case study on Lake Wilcox, a cold temperate urban lake
Hannah Adams	Global trends in timing and rate of seasonal chlorophyll-a increase in cold-temperate lakes: Application of a new metric
Amir Masoud Chegoonian	QUANTIFICATION OF CHLOROPHYLL-A CONCENTRATION IN SMALL EUTROPHIC LAKES USING SENTINEL-2 AND LANDSAT-8 IMAGERY AND LOCALLY TUNED

	MACHINE LEARNING MODELS: A CASE STUDY IN BUFFALO POUND LAKE, CANADA
Zahra Akbarzadeh	Nearshore-offshore phosphorus mass balance modelling for large lakes: The Lake Erie case study
Jaclyn Porter	Water Nutrient Monitoring and Comparison of On-site Citizen Science Data Collection Methods for Indigenous Water Protection
Erika A Burton	Optimizing environmental DNA detection protocols to generate fish presence data in remote freshwater systems
Cailyn M. Zamora	Validation of environmental DNA barcoding assays for Southern Ontario amphibian species
Ali Reza Shahvaran	Long-term monitoring of algal biomass in Western Lake Ontario using remote sensing and in situ data
Sara Packull-McCormick	Mercury Bioaccessibility in Raw and Cooked Tissue from Freshwater Fish Species from the Northwest Territories, Canada