

MAY 26 • MONDAY

7:30am – 8:30am	L	Breakfast	Ballroom 2
8:30am – 10:00am	B	Opening Ceremony and Keynote 1 We'll start the conference off in a good way with several folks from Sylix joining us: Greeting: Chief Gabriel Blessing: Caylx (Richard Armstong) Water Song: Whitney Cardenas The keynote presentation will be on the Okanagan Water Declaration.	Ballroom 2
10:00am – 10:30am	A	Break	Atrium and Lobby
10:30am – 12:00pm	M	Infrastructure Upgrades for Climate Adaptation <i>Moderators: Avneet Button</i> <i>Speakers: Émilie Bilodeau, Dwayne Meredith, Duncan McTaggart, Jason Yang</i> 10:30 AM - 10:50 AM Abstract ID: 57 Infrastructure Renewal – Isintok Dam Case Example Presenter: Dwayne Meredith, Kerr Wood Leidal Associates Ltd. <i>Additional Authors: Jeremy Storvold P.Eng., District of Summerland</i> 10:50 AM - 11:10 AM Abstract ID: 204 A Systemized Approach for Stormwater Outfall Condition Assessment and Evaluation Presenter: Duncan McTaggart, Stantec Consulting Ltd <i>Additional Authors: Duncan McTaggart, Stantec Consulting Ltd</i> 11:10 AM - 11:30 AM Abstract ID: 252 Upgrading Shingle Creek Infrastructure for the Penticton Indian Band Presenter: Jason Yang, Tetra Tech Canada Inc. <i>Additional Authors: Josh Weidner, Tetra Tech Canada Inc.; Spencer Pakulak, Tetra Tech Canada Inc.</i> 11:30 AM - 11:50 AM Abstract ID:56 Identifying Challenges and Solutions for Urban Densification in the Context of Climate Change: Municipal Perspectives Presenter: Émilie Bilodeau, École de technologie supérieure <i>Additional Authors: Professor Jean-Luc Martel, Hydrology, Climate and Climate Change (HC3) laboratory, École de technologie supérieure.</i>	Meeting 1-3
10:30am – 12:00pm	N	Uncharted Waters: Mapping the Unknown for Flood Resilience (FHIMP) - Part 1 <i>Moderators: Maxim Fortin, Brian Perry</i> <i>Speakers: Mouna Doghri, Andrew Plowright, Julie Van de Valk</i> 10:30 AM - 10:50 AM Abstract ID: 256 FHIMP Special Session Introduction and High-level Program Update (NRCan)" Presenter: Andrew Plowright, Natural Resources Canada <i>Additional Authors: Brian Perry, Natural Resources Canada</i> 10:50 AM - 11:10 AM Abstract ID: 6 Flood Hazard Identification and Mapping Program (FHIMP): Research Update and Technical Bulletins Presenter: Mouna Doghri, ECCC <i>Additional Authors: François Nzokou Tanekou, ECCC</i> 11:10 AM - 11:30 AM Abstract ID: 185 Identifying and Mapping Flood Hazard in Canada: How Local, Regional and Global Scales Come Into Play Presenter: Maxim Fortin, Natural Resources Canada 11:30 AM - 11:50 AM Abstract ID: 206 Part 1 – Technical Overview of An Update on Federally Identified Flood Risk Areas (FIFRA) Presenter: Julie Van de Valk, Public Safety Canada <i>Additional Authors: Jamie Gesualdo, Public Safety Canada; Karl Chastko, Public Safety Canada; Robin Bourke, Public Safety Canada; Sarah Hayes, Public Safety Canada; Jennifer Pellerin, Public Safety Canada; Mike Ballard, Public Safety Canada; Jamie Sandison, Public Safety Canada; Ayushi Gaur, Public Safety Canada;</i>	Meeting 6-7

Advancing predictions of hydroclimatic extremes - Too much water*Moderators: Cuauhtémoc Tonatíuh Vidrio-Sahagún, Paul Whitfield, Jianxun He**Speakers: Gaby Gründemann, Melinda M. Brugman, Jonathan Jalbert***10:30 AM - 10:45 AM**

Abstract ID: 202

Evolving Patterns of Hydro-Climatic Extremes Over Large Domains**Presenter:** Gaby Gründemann, University of Calgary**Additional Authors:** Ruud van der Ent, Delft University of Technology, the Netherlands; Nick van de Giesen, Delft University of Technology, the Netherlands; Lukas Brunner, University of Hamburg, Germany, New Mexico Tech, USA**10:45 AM - 11:00 AM**

Abstract ID: 226

An Impacts-based IDF-AR Storm Rating Scale for a Warming Climate**Presenter:** Melinda M. Brugman, Retired from Environment and Climate Change Canada**11:00 AM - 11:15 AM**

Abstract ID: 83

Interpolating Extreme Precipitation Characteristics for IDF Curve Construction in Canada**Presenter:** Jonathan Jalbert, Polytechnique Montréal**Additional Authors:** Luc Perreault, Institut de recherche d'Hydro-Québec**11:15 AM - 11:30 AM**

Abstract ID: 111

Flood Frequency Analysis in North America is Affected by Shifting Cold Regions Streamflow Regimes**Presenter:** Paul Whitfield, Centre for Hydrology, University of Saskatchewan**Additional Authors:** Don Burn, University of Waterloo**11:30 AM - 11:45 AM**

Abstract ID: 118

Advanced bias correction of hydroclimate extremes through nonstationary and ordinary-event-based approaches**Presenter:** Cuauhtémoc Tonatíuh Vidrio-Sahagún, University of Calgary**Additional Authors:** Jianxun He, University of Calgary; Alain Pietroniro, University of Calgary**CSHS Part 1: Advances in Hydrologic and Hydraulic Modelling***Moderators: James Craig**Speakers: Diana Spieler, Sarah Grass, Yegane Khoshkalam, Wanhong Yang, Tegan Holmes***10:30 AM - 10:50 AM**

Abstract ID: 124

Short-range Hydrological Ensemble Forecasting Using Long Short-term Memory Networks with Data Integration of Streamflow and Snow Observations**Presenter:** Yegane Khoshkalam, Institut national de la recherche scientifique - Eau Terre Environnement (INRS-ETE)**Additional Authors:** Alain N. Rousseau, Institut National de la Recherche Scientifique - Eau Terre Environnement (INRS-ETE), Québec City, QC, Canada; Farshid Rahmani, Pennsylvania State University, Department of Civil and Environmental Engineering, University Park, PA, United States; Chaopeng Shen, Pennsylvania State University, Department of Civil and Environmental Engineering, University Park, PA, United States; Kian Abbasnezhadi, Canadian Centre for Meteorological and Environmental Prediction, Meteorological Service of Canada, Environment and Climate Change Canada, Dorval, QC.**10:50 AM - 11:10 AM**

Abstract ID: 194

Can We Model Every Snowflake? Scaling Challenges in Hydrologic Modelling**Presenter:** Sarah Grass, Hyaltus Inc.**Additional Authors:** Peter John Thompson, Hyaltus Inc.; Michael Takeda, Hyaltus Inc.**11:10 AM - 11:30 AM**

Abstract ID: 48

Developing a Fully Distributed Watershed Model for Evaluating Water Quality Benefits of Agricultural Beneficial Management Practices**Presenter:** Tegan Holmes, University of Calgary**Additional Authors:** Yongbo Liu, Environment and Climate Change Canada; Hui Shao, Esri Canada Limited; Zhiqiang Yu, DHI Canada**11:30 AM - 11:50 AM**

Abstract ID: 127

When Calibration Metrics Choose Your Model: Investigating Model Selection for Different Purposes with Automatic Model Structure Identification**Presenter:** Diana Spieler

10:30am – 12:00pm	R	Environmental Flows & Climate Change <i>Moderators: Dr. Nelson Jatel</i> <i>Speakers: Zhaozhi (George) Wang, Ilias Hani, Stefan Gronsdahl</i> 10:30 AM - 10:50 AM Abstract ID: New Online Tool Delivers Real-Time Water Data for Healthy Ecosystems Presenter: Nelson Jatel, Okanagan Basin Water Board 10:50 AM - 11:10 AM Abstract ID: 147 Hydrological and Water Temperature Shifts in Atlantic Salmon Rivers in Northeastern America (1979-2100): Predicting Riverine Heatwaves Frequency Using Climate Variability and Climate Change Information Presenter: Ilias Hani, INRS <i>Additional Authors: Ilias Hani, INRS; Andre St-Hilaire, INRS; Taha B.M.J Ouarda, INRS, Canada Research Chair in Statistical Hydro-Climatology.</i> 11:10 AM - 11:30 AM Abstract ID: 112 Enhancing Watershed Resilience: Efficient Use of Existing Water Storage in Deadman River Presenter: Stefan Gronsdahl, SLR Consulting <i>Additional Authors: Shayne Kuchma, R.P.Bio, P.Ag., Science and Technical Program Lead, Secwépemc Fisheries Commission</i> 11:30 AM - 11:50 AM Abstract ID: 126 Okanagan Hydrometric Information Network Evolution Presenter: Zhaozhi (George) Wang, Okanagan Nation Alliance <i>Additional Authors: Nelson Jatel, Okanagan Basin Water Board</i>	Salon C
12:00pm – 1:30pm	L	Lunch	Ballroom 2
1:30pm – 3:00pm	M	Incorporating Climate Change Into Flood Management <i>Moderators: Craig Sutherland</i> <i>Speakers: Tamsin Lyle, Jeffrey Marvin, Phoebe Riddell, Jonathan Welke</i> 1:30 PM - 1:50 PM Abstract ID: 77 Cache Creek 2023: Did all this Flood Planning Help Presenter: Jonathan Welke, TRUE Consulting <i>Additional Authors: Predrag Prodanovic, Ph.D., P.Eng., TRUE Consulting</i> 1:50 PM - 2:10 PM Abstract ID: 161 The Development of a Simulation-Optimisation Framework to Optimise the Configuration of a System of Small Dams Using a Simplified Conceptual Inundation Model Presenter: Phoebe Riddell, University of Manitoba <i>Additional Authors: Masoud Asadzadeh, University of Manitoba; Scott Pokorny, Strategic Systems Engineering.; Andrew Murray, Strategic Systems Engineering; Henry Venema, Strategic Systems Engineering</i> 2:10 PM - 2:30 PM Abstract ID: 238 City of Courtenay Flood Management Plan Presenters: Tamsin Lyle, Ebbwater Consulting Inc. and Jeannienne Tazzioli, City of Courtenay <i>Additional Authors: Robert Larson, Ebbwater Consulting Inc.; Silja Hund, Ebbwater Consulting Inc.; Erica Crawford, HeronBridge Consulting; Nikoletta Stamatatou, Ebbwater Consulting Inc.</i> 2:30 PM - 2:50 PM Abstract ID: 104 YVR Stormwater Risk Assessment: Lowland Drainage Challenges for a Critical Transportation Service Presenter: Jeffrey Marvin, Kerr Wood Leidal <i>Additional Authors: James Blake, Vancouver Airport Authority</i>	Meeting 1-3

*Moderators: Maxim Fortin, Brian Perry**Speakers: Katryna Slimmon, Andrew Weiss, Jamie Gesualdo, Oluwaseun Oyebo***1:30 PM - 1:50 PM**

Abstract ID: 18

Part 2: FIFRA - Context and Implementation of the Federally Identified Flood Risk Areas (PS)**Presenter:** Jamie Gesualdo, Public Safety Canada, **Julie Van de Valk**, **Public Safety Canada****Additional Authors:** Karl Chastko, Public Safety Canada; Robin Bourke, Public Safety Canada; Sarah Hayes, Public Safety Canada; Jennifer Pellerin, Public Safety Canada**1:50 PM - 2:10 PM**

Abstract ID: 49

Climate Impacts in Floodplain Mapping: Case Studies in the FHIMP**Presenter:** Katryna Slimmon, Environment and Climate Change Canada**Additional Authors:** Joel Trubilowicz, Environment and Climate Change Canada; Mouna Doghri, Environment and Climate Change Canada**2:10 PM - 2:30 PM**

Abstract ID: 4

Towards Developing a Canada-Wide Peak Flow Atlas**Presenter:** Oluwaseun Oyebo, Environment and Climate Change Canada (ECCC)**Additional Authors:** Apurba Das, Environment and Climate Change Canada (ECCC); Ardalan Tootchifatidehi, Environment and Climate Change Canada (ECCC); Christie Cho, Environment and Climate Change Canada (ECCC); Anna Howes, Environment and Climate Change Canada (ECCC); Joel Trubilowicz, Environment and Climate Change Canada (ECCC)**2:30 PM - 2:50 PM**

Abstract ID: 130

Development of Technical Recommendations and Guidelines for Regional-Scale Flood Hazard Modelling and Mapping in Canada**Presenter:** Andrew Weiss, KGS Group**Additional Authors:** Méven Robin Huiban, DHI Water & Environment, Inc.; Maxim Fortin, Natural Resources Canada*Moderators: Cuauhtémoc Tonatiuh Vidrio-Sahagún, Paul Whitfield, Jianxun He**Speakers: Dave Sauchyn, Nadie Rupasinghe, Sharad Aryal, Aruna Kumar Nayak***1:30 PM - 1:50 PM**

Abstract ID: 176

A Thousand Years of Hydrological Drought Variability: Implications for the Prediction of Hydro-Climatic Extremes**Presenter:** Dave Sauchyn, Prairie Adaptation Research Collaborative, University of Regina**Additional Authors:** Mohammad Zare, Prairie Adaptation Research Collaborative, University of Regina; Dave Meko, Laboratory of Tree-Ring Research, University of Arizona**1:50 PM - 2:10 PM**

Abstract ID: 140

Snow Drought Classification in Southern Alberta**Presenter:** Nadie Rupasinghe, University of Calgary**Additional Authors:** Tricia Stadnyk, University of Calgary**2:10 PM - 2:30 PM**

Abstract ID: 141

Comparative Analysis of Drought Indices for Effective Drought Characterization in Southern Alberta**Presenter:** Sharad Aryal, University of Calgary**Additional Authors:** Quazi Hassan, University of Calgary; Hatef Dastour, University of Calgary**2:30 PM - 2:50 PM**

Abstract ID: 232

A Systematic Approach for Selecting Drought Indices and Timescales: A Case Study**Presenter:** Aruna Kumar Nayak, University of Calgary**Additional Authors:** Jianxun He, University of Calgary; Brandi Newton, Alberta Environment and Protected Area/ University of Calgary; Cathy Ryan, University of Calgary; Jean Birks, Alberta Environment and Protected Area/ University of Calgary; Nadine Taube, Alberta Environment and Protected Area

1:30pm – 3:00pm	C CSHS Part 2: Advances in Hydrologic and Hydraulic Modelling <i>Moderators: James Craig</i> <i>Speakers: Tegan Holmes, Rodolfo Alvarado Montero, Saman Razavi, Bryan A. Tolson</i> 1:30 PM - 1:50 PM Abstract ID: 188 Agnostic Strategy for Hydrological Model Calibration: A Case Study Using MESH Model Presenter: Rodolfo Alvarado Montero, University of Calgary <i>Additional Authors: Hongli Liu, University of Alberta; Mohamed Ismael Ahmed, University of Calgary; Cyril Thébault, University of Calgary; Darri Eythorsson, University of Calgary; Camille Gautier, University of Calgary; Martyn Clark, University of Calgary; Alain Pietroniro, University of Calgary;</i> 1:50 PM - 2:10 PM Abstract ID:99 Isotopes for Everyone: Development of a Model Agnostic Isotope Tracer Simulation Presenter: Tegan Holmes <i>Additional Authors: Tricia Stadnyk, University of Calgary; Alain Pietroniro, University of Calgary</i> 2:10 PM - 2:30 PM Abstract ID: 150 On Advancing Integrated Modelling of Hydrologic and Human Systems Presenter: Saman Razavi, University of Saskatchewan <i>Additional Authors: Corwyn Shomachuk, University of Saskatchewan; James Craig, University of Waterloo</i> 2:30 PM - 2:50 PM Abstract ID: 246 Ontario Hydrological Modelling Assessment Project: Contrasting Alternative Streamflow Simulation Models Presenter: Bryan A. Tolson, University of Waterloo <i>Additional Authors: Hongren Shen, Civil & Environmental Engineering Department, University of Waterloo; Bryan A. Tolson, Civil & Environmental Engineering Department, University of Waterloo; Ming Han, Ontario Power Generation & Civil & Environmental Engineering Department, University of Waterloo; Menaka Revel, Civil & Environmental Engineering Department, University of Waterloo; James R. Craig, Civil & Environmental Engineering Department, University of Waterloo; Robert Metcalfe, Environmental and Life Sciences Graduate Program, Trent University and Aquatic Research and Monitoring Section, Ministry of Natural Resources; Madeline G. Tucker, Civil & Environmental Engineering Department, University of Waterloo</i>	Salon B
1:30pm – 3:00pm	R Exploring Opportunities to Connect Science and Engineering with Traditional Ecological and Indigenous Knowledge <i>Moderators: Alicia Van Boven</i> <i>Speakers: Reza Rezvani, Amy Charles, Jason Yang, Samantha Mehlretter</i> 1:30 PM - 1:50 PM Abstract ID: 9 Currents of Change: Riding the Wave of Cultural and Social Sustainability Presenter: Amy Charles, Ocean Wise <i>Additional Authors:</i> 1:50 PM - 2:10 PM Abstract ID: 198 Developing Manomin (Wild Rice) Restoration Strategies that Reflect Anishinaabe and Western Knowledge Systems Presenter: Samantha Mehlretter, State University of New York at Buffalo <i>Additional Authors: Andrea Bradford, University of Guelph; Brittany Luby, University of Guelph</i> 2:10 PM - 2:30 PM Abstract ID: 251 Implementation of Image Velocimetry Technique Alongside Channel Assessment at Lower Adams River Presenter: Jason Yang, Tetra Tech Canada Inc. <i>Additional Authors: David Moschini, Tetra Tech Canada Inc.</i> 2:30 PM - 2:50 PM Abstract ID: 237 Exploring Hydrologic Extremes in the Nicola River Watershed: Weaving Science and Traditional Knowledge Together Presenter: Reza Rezvani, Ebbwater Consulting <i>Additional Authors: Tamsin Lyle, Ebbwater Consulting Inc.; Nikoletta Stamatatou, Ebbwater Consulting Inc.; Yinlue Wang, Ebbwater Consulting Inc.</i>	Salon C
3:00pm – 3:30pm	A Break	Atrium and Lobby

Moderators: Stefan Joyce

Speakers: James Craig, Marc Olivier Trottier, Jean-Luc Martel, Jonathan Romero

3:30 PM - 3:50 PM

Abstract ID: 55

Assessing the Adequacy of Traditional Hydrological Models for Climate Change Impact Studies: A Case for Long-Short-Term Memory (LSTM) Neural Networks

Presenter: Jean-Luc Martel, Hydrology, Climate and Climate Change (HC3) laboratory, École de technologie supérieure (ÉTS)

Additional Authors: François Brissette, HC3 laboratory, ÉTS; Richard Arsenault, HC3 laboratory, ÉTS; Richard Turcotte, Direction principale de l'expertise hydrique (DPEH), Ministère de l'Environnement et de la Lutte contre les changements climatiques, de la Faune et des Parcs (MELCCFP);

Mariana Castañeda-Gonzalez, HC3 laboratory, ÉTS; William Armstrong, HC3 laboratory, ÉTS; Edouard Mailhot, DPEH, MELCCFP; Jasmine Pelletier-Dumont, DPEH, MELCCFP; Gabriel Rondeau-Genesse, Ouranos; Louis-Philippe Caron, Ouranos

3:50 PM - 4:10 PM

Abstract ID: 115

Preparing for the Worst: A Simple Screening Method to Predict Wildfire Impacts on Flooding

Presenter: Jonathan Romero, University of Waterloo

Additional Authors: James R. Craig, Bryan A. Tolson, Parisa Aberi, Simon G. M. Lin, Mahkameh Taheri, and Rezgar Arabzadeh University of Waterloo, Civil and Environmental Engineering, Waterloo, ON, Canada

4:10 PM - 4:30 PM

Abstract ID: 213

Simulating Complex Water Resources Operations with the Raven Hydrological Modelling Framework

Presenter: James Craig, University of Waterloo

Additional Authors: Matt Chernos, MacDonald Hydrology Consultants, Ltd.; Robert Chlumsky, Heron Hydrologic, Ltd.; Ryan MacDonald, MacDonald Hydrology Consultants, Ltd.; Bryan Tolson, University of Waterloo;

4:30 PM - 4:50 PM

Abstract ID: 187

Enhancing Hydraulic Modelling in Kamloops Using SWOT-Derived Water Surface Elevation Data

Presenter: Marc Olivier Trottier, BGC Engineering

Moderators: Rob Caldwell

Speakers: Ryan MacDonald, Martin Suchy, Genevieve Brown, Ute Holweger, Melissa Hotain

3:30 PM - 3:50 PM

Abstract ID: 122

Modelling Climate Change Impacts on a Regulated Transboundary Lake

Presenter: Genevieve Brown, Northwest Hydraulic Consultants

3:50 PM - 4:10 PM

Abstract ID: 125

Climate Change Vulnerability Assessment for Orders of Approval: Challenges and Opportunities for IJC Boards of Control

Presenter: Martin Suchy, Environment and Climate Change Canada - National Hydrological Services

Additional Authors: Anna Warwick Sears, Okanagan Basin Water Board & IOLBC; David Hutchinson, Environmental and Climate Change Canada & IOLBC; Joel Trubilowicz, Environmental and Climate Change Canada & IKLBC

4:10 PM - 4:30 PM

Abstract ID: 164

The International Red River Watershed Board – Bridging Diverse Knowledge Systems and Enabling Respectful Indigenous Inclusion in Transboundary Cooperation on Water

Presenter: Ute Holweger, Canada Water Agency and Melissa Hotain, Sioux Valley Dakota Nation

Additional Authors: April Walker, US Co-chair, Indigenous Collaboration Task Team, International Red River Watershed Board

4:30 PM - 4:50 PM

Abstract ID: 175

Modernizing the Columbia River Treaty: Incorporating Ecosystem Function as a Third Objective

Presenter: Ryan MacDonald, MacHydro

*Moderators: Chris Gallagher**Speakers: Willemijn Appels, Andrew Nadler, Naresh Kumar Arumugagounder Thangaraju, Thomas Saleh***3:30 PM - 3:50 PM**

Abstract ID: 92

Advancing Collaborative, Data-Driven Water Stewardship on the Canadian Prairies**Presenter: Thomas Saleh, IISD Experimental Lakes Area***Additional Authors: Elena Milito, IISD Experimental Lakes Area; Joey Simoes, International Institute for Sustainable Development***3:50 PM - 4:10 PM**

Abstract ID: 245

Irrigation Sustainability in a Changing Climate: CMIP6 SSP-Based Projections and Adaptation Strategies**Presenter: Naresh Kumar Arumugagounder Thangaraju, McGill University***Additional Authors: Chandra Madramootoo, McGill University***4:10 PM - 4:30 PM**

Abstract ID: 210

Advances in Data Driven Irrigation Management**Presenter: Willemijn Appels, Lethbridge Polytechnic***Additional Authors: Mohamed Naouri, Lethbridge Polytechnic / Massachusetts Institute of Technology; Michael Kehoe, Lethbridge Polytechnic***4:30 PM - 4:50 PM**

Abstract ID: 152

Automated salinity monitoring to support irrigation in the Delta Region of British Columbia**Presenter: Andrew Nadler, Peak HydroMet Solutions Inc.***Speakers: Juan Carlos De La Cruz, Cuauhtémoc Tonatiuh Vidrio-Sahagún, Xiuquan Wang, Gabriel Dubé, Kenneth Lockwood***3:30 PM - 3:50 PM**

Abstract ID: 67

Assessing the Adequacy of Standard Freeboards for Flood Construction Levels in the Face of Climate Change: A Study in Merritt, BC**Presenter: Kenneth Lockwood, BGC Engineering***Additional Authors: Kenneth Lockwood, BGC Engineering Inc.***3:50 PM - 4:10 PM**

Abstract ID: 196

FHIMP 2023-2024: A Consultant's View of Navigating the Federal Flood Hazard Mapping Projects – FHIMP Round 1**Presenter: Gabriel Dubé, Aquafor Beech Limited***Additional Authors: Rob Amos, Aquafor Beech Limited***4:10 PM - 4:30 PM**

Abstract ID: 137

Design Flood Estimation in Canada: A Review of Practices, Challenges, and the Need for Guidelines**Presenter: Cuauhtémoc Tonatiuh Vidrio-Sahagún, University of Calgary***Additional Authors: Jianxun He, University of Calgary; Alain Pietroniro, University of Calgary; Melissa Hairabedian, BGC Engineering and University of Calgary***4:30 PM - 4:50 PM**

Abstract ID: 81

A Systematic Framework for Assessing Compound Flooding Risks in Coastal Regions**Presenter: Xander Wang, Canadian Centre for Climate Change and Adaptation, UPEI**

3:30pm – 5:00pm

R **CSHS: Hydrology in R**

Salon C

Moderators: Mary Ann Middleton

Speakers: Dan Moore, Matthew Bayly, Hamed Sharif

3:30 PM - 3:50 PM

Abstract ID: 207

Spatial Stream Network (SSN) Applications with the BC Freshwater Atlas and the National Hydro Network

Presenter: Matthew Bayly, M.J. Bayly Analytics Ltd.

Additional Authors: *Matthew Bayly, M.J. Bayly Analytics Ltd.*

3:50 PM - 4:10 PM

Abstract ID: 94

StormBase: an R Package to Objectively Identify and Analyze Runoff Events

Presenter: Hamed Sharif, UBC EOAS and Robertson GeoConsultants Inc.

Additional Authors: *Ali Ameli, University of British Columbia Department of Earth, Ocean, and Atmospheric Sciences*

4:10 PM - 4:30 PM

Abstract ID:258

An R-based workflow to search for Environment Canada weather stations within or near a catchment polygon and then programmatically download hourly or daily data

Presenter: Dan Moore, University of British Columbia

5:00pm – 6:00pm

B **CWRA Annual General Meeting**

Ballroom 2

6:00pm – 8:00pm

O **SYP Event**

Neighbourhood Brewing (187 Westminster Ave W, Penticton, BC V2A 1J7)

Join the CWRA BC Students and Young Professionals for an evening of speed networking at Neighbourhood Brewing! Connect with fellow professionals over great food, beverages, and casual conversation. Whether you're a seasoned or young professional, this is the perfect way to share industry insights, discuss water and resiliency, and build meaningful connections!

MAY 27 • TUESDAY

7:30am – 8:30am	L	Breakfast	Ballroom 2
8:30am – 10:00am	M	Advanced Models for Floodplain Mapping <i>Moderators: Eric Kohnen</i> <i>Speakers: Marie-Amélie Boucher, Richard Cunningham, Chloe Sirges, Sophia Eugeni</i> 8:30 AM - 8:50 AM Abstract ID: 40 A flood-damage model for the Trois-Lacs (Quebec) using random forests Presenter: Marie-Amélie Boucher, Université de Sherbrooke Additional Authors: Sergio Andrés Redondo Tilano, Université de Sherbrooke; Jay Lacey, Université de Sherbrooke; Philippe LeBel, MRC des Sources 8:50 AM - 9:10 AM Abstract ID: 61 Investigating Bridge Blockage Impacts on Floodplain Mapping Presenter: Sophia Eugene, Northwest Hydraulic Consultants Additional Authors: Vanessa McMaster, Northwest Hydraulic Consultants; Dale Muir, Northwest Hydraulic Consultants; 9:10 AM - 9:30 AM Abstract ID: 73 Complexities in Large-Scale, High-Resolution Flood Plain Mapping: Fraser, Nechako, Salmon and Chilako Rivers Flood Mapping Study Presenters: Chloe Sirges and Andromeda MacIsaac, Associated Engineering (B.C.) Ltd. 9:30 AM - 9:50 AM Abstract ID: 7 Subtractive flow: a novel approach to non-concurrent flood modelling in 2D Presenter: Richard Cunningham, WSP Canada Inc. Additional Authors: Dr. Wolf Ploeger, WSP Canada Inc.	Meeting 1-3
8:30am – 10:00am	S	Improving Stormwater with LID <i>Moderators: Jianxun He, Bill Trenouth</i> <i>Speakers: Julie McManus, Melanie McGrory, Julian-Marie Jones, Ahmed Abdelaal</i> 8:30 AM - 8:50 AM Abstract ID: 134 Predicting Flow Capture in Permeable Pavements: A Machine Learning Approach to LID Material Performance Presenter: Ahmed Abdelaal, McMaster University Additional Authors: Sonia Hassini, McMaster University 8:50 AM - 9:10 AM Abstract ID: 10 Still Creek Rainwater Management Enhancements - Reconnecting Landscapes Presenter: Bill Trenouth, AECOM Canada Ltd. and Julie McManus, City of Vancouver 9:10 AM - 9:30 AM Abstract ID: 165 Effectiveness of LIDs on Urban Creek Flow Regimes within a Cold Climate Context: A Case Study on the Whitemud Creek Watershed, Edmonton, Alberta Presenter: Julian-Marie Jones, University of Alberta Additional Authors: Brian Smerdon, University of Alberta; Monireh Faramarzi, University of Alberta; 9:30 AM - 9:50 AM Abstract ID: 105 Optimization of Low Impact Development Approaches in a Sustainable Muti-Criteria Analysis to Develop a Better Adaptation Strategy to Climate Change in Urban Areas Presenter: Melanie McGrory, École de technologie supérieure Additional Authors: Jean-Luc Martel, École de technologie supérieure	Salon A

8:30am – 10:00am	C	CSHS: Advances in Reporting on Status and Trends in Canadian Waters <i>Moderators: Paul Whitfield, Mason Marchildon</i> <i>Speakers: Sandra Schira, Mike Murray</i> 8:30 AM - 8:50 AM Abstract ID: 60 Forecasting Future Trends in Drinking Water Quality: A Focus on Ontario Municipal Water Supply Systems Presenter: Mason Marchildon, Oak Ridges Moraine Groundwater Program Additional Authors: Hailey Ashworth, Credit Valley Conservation; Kata Bavrlc, Credit Valley Conservation; Behnam Doulatyari, Credit Valley Conservation; Mason Marchildon, Oak Ridges Moraine Groundwater Program 8:50 AM - 9:10 AM Abstract ID: 93 State of the Bow River Watershed: A Collaborative Approach to Water Quality Reporting Presenter: Mike Murray, Bow River Basin Council Additional Authors: Klas Ohman, Associated Engineering; Cathy Ryan, University of Calgary; Lauren Thompson; Hatfield Consultants 9:10 AM - 9:30 AM Abstract ID: 15 A Climate Indicator Dashboard for Communicating Climate Change in the Okanagan Valley Presenter: Sandra Schira, Okanagan Basin Water Board 9:30 AM - 9:50 AM Abstract ID: 183 Status and Trends in Canadian Waters Presenter: Paul Whitfield, University of Saskatchewan Centre for Hydrology Additional Authors: Robert Metcalfe, Ontario Ministry of Natural Resources	Salon B
8:30am – 10:00am	R	Transboundary Water Governance for a More Resilient Water Future <i>Moderators: Gillian Walker</i> <i>Speakers: Dr. Nelson Jatel, Rheanne Kroschinsky, Jim Friesen, Ian Rogalski</i> 8:30 AM - 8:50 AM Abstract ID: 145 The Prairie Provinces Water Board Apportionment of Transboundary Waters (Qu’Appelle River) Presenter: Jim Friesen, Canada Water Agency Additional Authors: Patrick Cherneski, CWA and Ali Khan, CWA 8:50 AM - 9:10 AM Abstract ID: 254 Developing Collaborative Approaches for Transboundary Water Governance Presenter: Ian Rogalski, Canada Water Agency 9:10 AM - 9:30 AM Abstract ID: 50 Centralized Coordination in Watershed Governance: Examining Resilience Through the Lens of the Okanagan Basin Water Board Presenter: Nelson Jatel, Okanagan Basin Water Board 9:30 AM - 9:50 AM Abstract ID: 191 State of Watershed Governance in British Columbia – A Review of Comparative Case Studies to Reveal Conditions and Opportunities to Improve Watershed Outcomes and Governance Presenter: Rheanne Kroschinsky, POLIS Water Sustainability Project Additional Authors: Oliver Brandes, POLIS Water Sustainability Project	Salon C
10:00am – 10:30am	A	Break	Atrium and Lobby

Moderators: Stephanie Smith

Speakers: Befekadu Taddesse Woldegiorgis, Kai Tsuruta, Dave Casson, Lingling Liu

10:30 AM - 10:50 AM

Abstract ID: 26

Hydrometric Data Services of the National Hydrological Services

Presenter: Lingling Liu, National Hydrological Services, Environment and Climate Change Canada

10:50 AM - 11:10 AM

Abstract ID: 59

Decision Calendars to Improve Research and Operational Collaboration in Hydrological Forecasting

Presenter: Dave Casson, University of Calgary

Additional Authors: Andrea Ray, NOAA; Martyn Clark, University of Calgary

11:10 AM - 11:30 AM

Abstract ID: 186

On the Use of the Right Flow Equations for Simulating Unregulated Lake Discharges

Presenter: Befekadu Taddesse Woldegiorgis, University of Calgary

Additional Authors: Martyn Clark, University of Calgary; Christopher Spence, Environment and Climate Change Canada

11:30 AM - 11:50 AM

Abstract ID: 228

Development of a Regional Hydrological Model to Support Stream Temperature Predictions in Coastal Rainforest Watersheds

Presenter: Kai Tsuruta, Hakai Institute

Additional Authors: Dan Moore, UBC

Moderators: Craig Sutherland

Speakers: Alexander MacDuff, Brett Eaton, Hamid Gozini, Evan Shih

10:30 AM - 10:50 AM

Abstract ID: 70

Guided and Targeted Synthetic Streamflow Generation for Multisite Studies

Presenter: Hamid Gozini, University of Manitoba

Additional Authors: Hamid Gozini¹, Masoud Asadzadeh¹, Tricia Stadnyk²; ¹ University of Manitoba, Department of Civil Engineering, Winnipeg, Manitoba, Canada; ² University of Calgary, Department of Civil Engineering, Calgary, Alberta, Canada

10:50 AM - 11:10 AM

Abstract ID: 177

Raising the Ecological Bar on River Engineering

Presenter: Evan Shih, BGC Engineering Inc.

Additional Authors: Sarah Davidson, BGC Engineering Inc.; Alan Jonsson, Kerr Wood Leidal Associates Ltd.

11:10 AM - 11:30 AM

Abstract ID: 91

Bank Erosion or Flood Inundation? How Flood Hazard Changes with Across the Continuum of Channel Sizes.

Presenter: Brett Eaton, BGC Engineering

Additional Authors: Sarah Davidson, BGC Engineering; Blanca Marin Esteve, BGC Engineering; Kathleen Horita, BGC Engineering; Lucy MacKenzie, BGC Engineering

11:30 AM - 11:50 AM

Abstract ID: 195

A Screening Approach to Assessing Lateral Erosion Hazards Across North America

Presenter: Alexander MacDuff, Stantec Consulting Ltd.

Additional Authors: Richard Guthrie, Stantec Consulting Ltd; Jan Bracic, Stantec Consulting Ltd; Millan Sen, Enbridge Inc.; Onyekachi Ndubuaku, Enbridge Inc.

*Moderators: Jianxun He, Bill Trenouth**Speakers: Julie McManus, Sylvie Spraakman, Michael Hannah, Ghazal Jalali***10:30 AM - 10:50 AM**

Abstract ID: 179

Impact of design on nutrient leaching of bioretention systems**Presenter: Ghazal Jalali, University of Calgary*****Additional Authors:** Yihui, Zhang, University of Calgary; Anton, Skorobogatov, University of Calgary; Jianxun, He, University of Calgary; Caterina, Valeo, University of Victoria; Angus, Chu, University of Calgary; Jian Huang, Mount Royal University, Calgary; Bert, van Duin, University of Calgary, City of Calgary; Leta, van Duin, Alberta Low Impact Development Partnership***10:50 AM - 11:10 AM**

Abstract ID: 34

Integrating Lessons learned from GI Maintenance and Stewardship into Design**Presenter: Sylvie Spraakman and Julie McManus, City of Vancouver*****Additional Authors:*****11:10 AM - 11:30 AM**

Abstract ID: 87

Enhancing Urban Resilience: Rehabilitating Green Stormwater Infrastructure and Drawing 'Lessons Learned' From Early Pilot Projects**Presenter: Bill Trenouth, AECOM Canada ULC****11:30 AM - 11:50 AM**

Abstract ID: 154

Quantifying the Benefits of Pre-Treatment in Low-Impact Design: A Case Study Approach**Presenter: Michael Hannah, Enviropod Canada*****Additional Authors:** Julia Watson, Enviropod International.**Moderators: Derek Brzoza, Lyssa Maurer**Speakers: Dan Moore, Paul Whitfield, Jonathan Jeffery, Matthew Tong***10:30 AM - 10:50 AM**

Abstract ID: 32

Software applications for fitting stage-discharge rating curves: a survey of available tools and current practice**Presenter: Dan Moore, University of British Columbia*****Additional Authors:** Stephanie Moore, Water Survey of Canada***10:50 AM - 11:10 AM**

Abstract ID: 71

A Review and Comparison of Statistical Approaches to Fitting Rating Curves**Presenter: Paul Whitfield, Centre for Hydrology, University of Saskatchewan*****Additional Authors:** R.D. Dan Moore, Department of Geography, University of British Columbia, Vancouver***11:10 AM - 11:30 AM**

Abstract ID: 144

Resilient Hydrometric Infrastructure for Canada's National Hydrometric Program**Presenter: Matthew Tong, Environment and Climate Change Canada - National Hydrological Service.****11:30 AM - 11:50 AM**

Abstract ID: 88

Introducing HydRA an Online Rating Curve Tool for All**Presenter: Jonathan Jeffery, BC Ministry of Environment*****Additional Authors:** Yongbo Liu, Environment and Climate Change Canada; Hui Shao, Esri Canada Limited; Zhiqiang Yu, DHI Canada*

10:30am – 12:00pm	R	Exploring Opportunities to Connect Science and Engineering with Traditional Ecological and Indigenous Knowledge Moderators: Amanda Rust Speakers: Hayley Melrose, Kristian Dubrawski, Andrea Kennedy, Robert Larson 10:30 AM - 10:50 AM Abstract ID: 33 Braiding Ways of Knowing for Meaningful Watershed Stewardship and Reconciliation Presenter: Andrea Kennedy, Saulteau First Nations / Bridgeway Consulting Additional Authors: Teena Demeaulemeester, Saulteau First Nations (Treaty Rights and Environmental Protection Department), will be co-presenting this presentation with Dr. Andrea Kennedy. 10:50 AM - 11:10 AM Abstract ID: 233 Flood Adaptation in the North Okanagan Presenter: Robert Larson, Ebbwater Consulting Inc. Additional Authors: Silja Hund, Ebbwater Consulting Inc.; Patrick Riley, Okanagan Indian Band 11:10 AM - 11:30 AM Abstract ID: 197 How Stewardship of Small Water Systems is a Lever for Landscape-Scale Watershed Health Presenter: Kristian Dubrawski, University of Victoria Additional Authors: 2 Acker, L.M.; 2 Brill, G.; 1 Cabling, P.; 2 Dekker, I.; 1 Shariyazd, S.; 1 Jones, P.; 2 Balakarzai, T.; 1 Samadi, S.; 2 Howard, A.; 1 University of Victoria Civil Engineering; 2 University of Victoria, Geography 11:30 AM - 11:50 AM Abstract ID: 101 Up in the Air: Utilizing Air Photos and LiDAR in Community-Led Hydraulic Modelling Presenter: Hayley Melrose, University of Calgary Additional Authors: Dr. Tricia Stadnyk, University of Calgary; Dr. Kerry Black, University of Calgary; Dr. Mohamed Ahmed, University of Calgary; Terri Whitehead, University of Calgary	Salon C
12:00pm – 1:30pm	L	Lunch - brought to you by Binnie 	Ballroom 2
1:30pm – 3:00pm	A	Poster Viewing Session	Atrium and Lobby
3:00pm – 3:30pm	A	Break	Atrium and Lobby

Moderators: Emily Reeves
Speakers: Pete Thompson, Jaime Leavitt, Ashlee Jollymore, Brandi Newton, Eowyn Campbell

3:30 PM - 3:45 PM

Abstract ID: 216

Climate and Groundwater Drivers of Stream Temperature Variability in the Elbow River

Presenter: Brandi Newton, Alberta Environment and Protected Areas

Additional Authors: ustin Hanisch, Alberta Environment and Protected Areas; Nadine Taube, Alberta Environment and Protected Areas; Shawn Marshall, Environment and Climate Change Canada and University of Calgary; Fateme Taridashti, University of Calgary; Jean Birks, Alberta Environment and Protected Areas and University of Calgary; Cathy Ryan, University of Calgary

3:45 PM - 4:00 PM

Abstract ID: 221

Understanding the Vulnerability of Valley-Bottom water availability via connectivity to mountainous sources: Ya'qit ᑭᓱᓂᓱᓂ First Nation, BC

Presenter: Ashlee Jollymore, MacDonald Hydrology Consultants Ltd.

Additional Authors: Ashlee Jollymore, Devin Cairns, Matthew Chernos, Spencer Spannier, Beth Millions, Jon Fennell, Ryan MacDonald (all MacDonald Hydrology Consultants Ltd.)

4:00 PM - 4:15 PM

Abstract ID: 249

Development of an Integrated Surface-Water Groundwater Model to Support Cumulative Effects Assessment in a Mine-Impacted Subalpine Watershed

Presenter: Peter John Thompson, Hyaltus Inc.

Additional Authors: Michael Takeda, Hyaltus Inc.; Sarah Grass, Hyaltus Inc.; Braydon Ralph, Hyaltus Inc.; Al Hossain, Ensero Solutions (formerly at Elk Valley Resources); Jessica Mackie, Elk Valley Resources

4:15 PM - 4:30 PM

Abstract ID: 253

Streamflow in Eastern Slopes Rockies Rivers is Relatively Stable, but Source Waters are Shifting

Presenter: Eowyn Campbell, University of Calgary

Additional Authors: Sepideh Kheirkhah, University of Calgary; Fateme Taridashti, University of Calgary; Sarah Wensink, University of Calgary; Cathy Ryan, University of Calgary

4:30 PM - 4:45 PM

Abstract ID: 14

Modeling the downstream impacts of River Regulation on the Grand Lake Meadows Complex using Delft3D FM Suite

Presenter: Jaime Leavitt, University of New Brunswick

Additional Authors: Dr. Katy Haralampides, UNB Civil Engineering;

Moderators: Jianxun He, Bill Trenouth
Speakers: Jennifer Drake, Meichen Zhao, Caterina Valeo

3:30 PM - 3:50 PM

Abstract ID: 172

Rainwater Tree Trench LIDs: Supporting Sustainable Stormwater Management and Mitigating the Urban Heat Island Effect

Presenter: Meichen Zhao, University of Victoria

Additional Authors: Meichen (Esther) Zhao, Caterina Valeo, Jingwen Liu, Xilin Wang, Rishi Gupta, C. Peter Constable, Phalguni Mukhopadhyaya, Jianxun (Jennifer) He, Angus Chu, Sylvie Spraakman

3:50 PM - 4:10 PM

Abstract ID: 174

Bioretention Performance in Temperate Climates During Plant Abscission

Presenter: Caterina Valeo, University of Victoria

Additional Authors: Jessica Dharmi, Caterina Valeo, Angus Chu, Jianxun (Jennifer) He

4:10 PM - 4:30 PM

Abstract ID: 36

Impact of De-Icing Salt on Vegetation Health and Cover in Bioretention System within Road Right-of-Way

Presenter: Jennifer Drake, Carleton University

Additional Authors: Bhabishya, Khaniya, University of Toronto; Tim Flietcher, University of Melbourne; Christopher Szota, University of Melbourne

4:30 PM - 4:50 PM

Abstract ID: 152

Understanding the role of winter stormwater on the Rideau Canal Skateway

Presenter: Jennifer Drake, Carleton University

Additional Authors: Adele Watson, Jennifer Drake, Cole Van De Ven

3:30pm – 5:00pm	C CSHS and NASH Part 2: Advances in Monitoring of our Water Resources Moderators: Derek Brzoza, Lyssa Maurer Speakers: Braeden Toikka, Arlo Bryn-Thorn, Ryan Rolick, Rodolfo Alvarado Montero, Terri Whitehead 3:30 PM - 3:50 PM Abstract ID:21 Hydrology, Water Decisions, and Water Projects in Northeast BC Presenter: Ryan Rolick, BC Energy Regulator 3:50 PM - 4:10 PM Abstract ID: 230 Tracking Water's Frozen Fingerprints: High-Frequency Isotope and Hydrologic Monitoring for Improved Runoff Prediction in the Canadian Rocky Mountains Presenter: Terri Whitehead, University of Calgary Additional Authors: Dr. Tricia Stadnyk, University of Calgary; Dr. Alain Pietroniro, University of Calgary; Dr. John Pomeroy, University of Saskatchewan; Paul Harrop, University of Calgary; Maria Gabriela Tejada Toapanta, University of Calgary; Hannah Koslowsky, University of Saskatchewan; Kieran Lehan, University of Saskatchewan 4:10 PM - 4:30 PM Abstract ID: 116 Water Security Through Community-Directed Monitoring in the Canadian Columbia Basin: Democratizing Watershed Data Presenter: Braeden Toikka and Arlo Bryn-Thorn, Living Lakes Canada Additional Authors: Paige Thurston, Living Lakes Canada 4:30 PM - 4:50 PM Abstract ID: 167 Assessment of SWOT Observations for Hydrological Modelling Presenter: Rodolfo Alvarado Montero, University of Calgary Additional Authors: Alain Pietroniro, University of Calgary	Salon B
3:30pm – 5:00pm	R BC Water Governance: Water Scarcity to Water Abundance Moderators: Gillian Walker Speakers: Jacob Nunn, Oliver Brandes, Rheanne Kroschinsky, Deanna Liao 3:30 PM - 3:50 PM Abstract ID:247 Towards Watershed Security: Water, wildfire, and modernized land use planning in British Columbia—lessons and opportunities Presenter: Oliver Brandes, University of Victoria's POLIS Project on Ecological Governance 3:50 PM - 4:10 PM Abstract ID: 39 Forecasting Seasonal Groundwater Levels in Rain and Snow Dominated Recharge Settings Presenter: Jacob Nunn, Hatfield Consultants Additional Authors: Josh Beckers, Hatfield Consultants,; Jon Goetz, BC Ministry of Water, Land and Resource Stewardship - River Forecast Centre,; Bryan Jackson, BC Ministry of Environment and Parks - Environmental Protection Division; 4:10 PM - 4:30 PM Abstract ID: 170 Co-creating a Framework for Governance of the sqw'a (Peachland Creek) Community Watershed Presenter: Rheanne Kroschinsky, UBC Okanagan Additional Authors: Dawn Machin, University of British Columbia, Okanagan 4:30 PM - 4:50 PM Abstract ID: 46 Mapping Resilience: Integrating Indigenous Knowledge and Community Voices into Floodplain Planning Presenter: Deanna Liao, McElhanney Ltd.	Salon C
5:30pm – 8:00pm	O Banquet Join us for a keynote speech, a lovely buffet dinner, bar & CWRA awards!  Mark Fisher, President of Canada Water Agency, will share his wealth of knowledge and leadership experience in the water sector. With over 20 years of experience across government, corporate, academic, and non-profit sectors, Mark's work has shaped the conversation around collaborative water governance, environmental policy, and regional water management.	Lakeside Resort

MAY 28 • WEDNESDAY

7:30am – 8:30am	L	Breakfast	Ballroom 2
8:30am – 10:00am	M	Natural Channel Design <i>Moderators: Avneet Button</i> <i>Speakers: Doug Johnston, James Bigelow, Allison Matfin, Luc Harvey, Rachael Messenger-Lehmann</i> 8:30 AM - 8:50 AM Abstract ID: 157 Floodplain Constraints Affect the Morphology of a Meandering River Presenter: Rachel Messenger-Lehmann, University of Waterloo Additional Authors: Bruce MacVicar, University of Waterloo.; Jonathan Slaney, City of Calgary.; Peter Ashmore, Western University 8:50 AM - 9:10 AM Abstract ID: 171 Aberfeldie Fish Habitat Improvements - Enhancements to a Mountain Stream in Southeastern BC Presenter: Allison Matfin, Kerr Wood Leidal Associates Ltd. Additional Authors: Jason Miller, Kerr Wood Leidal Associates Ltd.; Trish Joyce, BC Hydro 9:10 AM - 9:30 AM Abstract ID: 74 Weir-Riffle Structures – Applications, Benefits, and Constructability Presenter: Luc Harvey and Doug Johnston, McElhanney Ltd. Additional Authors: 9:30 AM - 9:40 AM Abstract ID: 30 Balancing Flood Conveyance and Fish Habitat Design in a Steep Urban Stream: A Case Study of the Penticton Creek Restoration Presenter: James Bigelow, Stantec Consulting Ltd.	Meeting 1-3

8:30am – 10:00am

S

Dynamics of Integrated Climate – Surface Water – Groundwater Systems

Moderators: Sepideh Kheirkhah

Speakers: Cathy Ryan, Mason Marchildon, Luis Carlos Serrano Diaz, Brian Smerdon, Kendall Marshall

8:30 AM - 8:45 AM

Abstract ID: 45

Apportioning baseflow contributions to the Bow River in the Eastern Slopes Alberta, Canada

Presenter: Kendall Marshall, University of Calgary and AEPA

Additional Authors: Cathy Ryan, University of Calgary; Jean Birks, Alberta Environment and Protected Areas (AEPA); Brandi Newton, AEPA; Nadine Taube, AEPA; Eowyn Campbell, University of British Columbia;

8:45 AM - 9:00 AM

Abstract ID: 62

Groundwater Level Variability: Implications for Sustainable Urban Development

Presenter: Mason Marchildon, Oak Ridges Moraine Groundwater Program

Additional Authors: Mason Marchildon, Rick Gerber, Steve Holysh, Mike Doughty, Britt Smith, Steve Shikaze, Oak Ridges Moraine Groundwater Program

9:00 AM - 9:15 AM

Abstract ID: 153

Large Scale Hydrological Models in Western Canada: The Trend is Towards Integration, but Groundwater Remains Overly Simplified

Presenter: Brian Smerdon, University of Alberta

Additional Authors: Luis Carlos Serrano Diaz, University of Alberta; Melissa Bunn, Geological Survey of Canada; Hazen A.J. Russell, Geological Survey of Canada

9:15 AM - 9:30 AM

Abstract ID: 110

Developing an Integrated Regional-Scale Groundwater-Surface Water Model to Evaluate Impacts of Land-Use/Land-Cover and Climate Change on Water Resources in Central Alberta

Presenter: Luis Carlos Serrano Diaz, Alberta Energy Regulator / Alberta Geological Survey

Additional Authors: Serrano Diaz, Luis Carlos, Alberta Energy Regulator / Alberta Geological Survey; Liggett, Jessica E., Alberta Energy Regulator / Alberta Geological Survey, Xu, Bruce, Aquanty Inc

9:30 AM - 9:45 AM

Abstract ID: 108

Geochemical Analysis of the Sheep River: Insights into the Impact of Climate Change on Flow Pathways

Presenter: Sepideh Kheirkhah, University of Calgary

Additional Authors: Sepideh Kheirkhah, University of Calgary, Bow River Basin Council; Jianxun He, University of Calgary; M. Cathryn Ryan, University of Calgary; Brandi Newton, Alberta Environment and Protected Areas; Jean Birks, Alberta Environment and Protected Areas; Nadine Taube, Alberta Environment and Protected Areas;

8:30am – 10:00am

C

Floodplain Mapping & Modelling

Moderators: Paige Hundt

Speakers: Pat Prodanovic, Anna Beedell, Hannah Irvine, Ryan Wu, Amir Taleghani, Ralph Bathelemy

8:30 AM - 8:50 AM

Abstract ID: 117

Analyse hydrométéorologique des inondations printanières de 2017 et 2019 dans le Sud du Québec

Presenter: Ralph Bathelemy, Université de Sherbrooke

Additional Authors: Ralph Bathelemy, Department of Civil and Building Engineering, Université de Sherbrooke, Quebec, Canada; Marie-Amélie Boucher, Department of Civil and Building Engineering, Université de Sherbrooke, Quebec, Canada;

8:50 AM - 9:10 AM

Abstract ID: 128

Wave Effect Analyses for Flood Hazard Mapping of BC's Inland Lakes

Presenter: Pat Prodanovic, TRUE Consulting

Additional Authors: Jonathan Welke, TRUE Consulting

9:10 AM - 9:30 AM

Abstract ID: 41

Hidden in (flood)plain Sight: Mapping Extreme Rainfall Flood Hazards in Dense Urban Areas

Presenter: Amir Taleghani, City of Vancouver

9:30 AM - 9:50 AM

More Than Just a Model: A Flood Mitigation Plan for Hatzic Lake BC - Presentation of the winning CWRA Student Design Competition submission

Presenter: Anna Beedell, Ryan Wu, Hannah Irvine, University of Waterloo

Salon A

Salon B

Moderators: Stephanie Smith
Speakers: Bryan A. Tolson, Leigh Sinclair, Saman Razavi, Menaka Revel, Benjamin Bouchard
8:30 AM - 8:50 AM
Abstract ID: 69
Representation of Soil Freezing in the SVS Land Surface Scheme for Improved Winter and Spring Streamflow Simulations Over the Great Lakes-St. Lawrence Basin
Presenter: Benjamin Bouchard, Meteorological Research Division, Environment and Climate Change Canada
Additional Authors: Vincent Vionnet, Meteorological Research Division, Environment and Climate Change Canada; Étienne Gaborit, Meteorological Research Division, Environment and Climate Change Canada; Vincent Fortin, Meteorological Research Division, Environment and Climate Change Canada

8:50 AM - 9:10 AM
Abstract ID: 151
Changing Flood-Generating Mechanisms in the Canadian Prairies
Presenter: Saman Razavi, University of Saskatchewan
Additional Authors: Majid Dehghani Sanji, University of Saskatchewan; Corwyn Shomachuk, University of Saskatchewan; Fisaha Unduche, Manitoba Infrastructure and Transportation

9:10 AM - 9:30 AM
Abstract ID: 208
Large-Scale Computationally Efficient River Basin Modeling: A Calibrated Raven River Routing Model for the Mackenzie River and Ottawa River Basins
Presenter: Bryan Tolson, University of Waterloo
Additional Authors: Menaka Revel, University of Waterloo; James Craig, University of Waterloo; Hongren Shen, University of Waterloo; Etienne Gaborit, Environment And Climate Change Canada

9:30 AM - 9:40 AM
Abstract ID: 178
From Field to Tables: Advancing Water Survey of Canada's Hydrometric Data
Presenter: Leigh Sinclair, Environment and Climate Change Canada - National Hydrological Service
Additional Authors: Amber Brown, Environment Canada - National Hydrological Service

Moderators: Dr. Nelson Jatel
Speakers: Katie Healey, Matthew Pruett, Thais Ayres Rebello, Brian Guy
10:30 AM - 10:50 AM
Abstract ID: 76
Science on Tap – Applying Environmental Flow Science for Sustainable Water Management Decisions
Presenter: Katie Healey, Ecofish Research Ltd. (A Trinity Consultants Team)
Additional Authors: Jayson Kurtz, Ecofish Research Ltd. (A Trinity Consultants Team)

10:50 AM - 11:10 AM
Abstract ID: 121
Why Does the Okanagan Lake Regulation System Need Modernizing and How Should it be Done?
Presenter: Brian Guy, Associated Environmental Consultants Inc.
Additional Authors: Anna Warwick Sears, Executive Director - Okanagan Basin Water Board

11:10 AM - 11:30 AM
Abstract ID:85
The One Water Approach: Opportunities for Enhancing Urban Water Systems and a Web Tool Proposal
Presenter: Thais Ayres Rebello, University of British Columbia
Additional Authors: Vipul Moudgil, University of British Columbia; Haroon R. Mian, University of British Columbia; Kasun Hewage, University of British Columbia; Rehan Sadiq, University of British Columbia;

11:30 AM - 11:50 AM
Abstract ID: 242
Okanagan Real-time Environmental Flow Needs Explorer: A Data Driven Web Application
Presenter: Matthew Pruett, Ecofish Research
Additional Authors: Katie Healey, Ecofish Research; Joe Kennedy, Ecofish Research; Patrick Little, BC Ministry of Water, Land and Resource Stewardship;

*Moderators: Navratna Sandhu**Speakers: Duc Hai Nguyen, Trevor Boston, Elise Legarth, Raymond Xu***10:30 AM - 10:50 AM**

Abstract ID: 51

Riding the AI Wave: Development and Evaluation of Deep Learning Models for Streamflow Forecast in Southwestern Alberta**Presenter: Raymond Xu, University of Alberta, BGC Engineering Inc.****Additional Authors:** *Rahel Kidanu, University of Alberta, Evan G.R. Davies, University of Alberta***10:50 AM - 11:10 AM**

Abstract ID: 8

Development and Deployment of a Machine Learning Based Model for North America-Wide Hydrometric Flow Forecasting**Presenter: Trevor Boston, Greenland Consulting****Additional Authors:** *Steven French***11:10 AM - 11:30 AM**

Abstract ID: 25

Towards an understanding of model uncertainties associated with the probable maximum flood**Presenter: Elise Legarth, University of British Columbia****Additional Authors:** *Roland Stull, UBC. Sean Fleming, UBC.***11:30 AM - 11:50 AM**

Abstract ID: 156

Input Variable Selection for Developing Machine Learning-Based Seasonal Streamflow Forecasting Models**Presenter: Duc Hai Nguyen, University of Saskatchewan****Additional Authors:** *Amin Elshorbagy, Department of Civil, Geological, and Environmental Engineering, University of Saskatchewan, Saskatoon, SK, Canada; Muhammad Naveed Khaliq, Ocean, Coastal, and River Engineering Research Centre, National Research Council Canada, Ottawa, ON, Canada;**Moderators: Stefan Joyce**Speakers: Kuangyin Zhao, Craig Sutherland, Matthew Simard, Sabrina Draude, Jennifer Coryell***10:30 AM - 10:50 AM**

Abstract ID: 203

Institutionalizing Climate Adaptation Agency-Wide to Achieve Reliability and Resilience: Metropolitan Water District of Southern California CAMP4W Process**Presenter: Jennifer Coryell, Hazen and Sawyer****Additional Authors:** *Liz Crosson, Metropolitan Water District of Southern California***10:50 AM - 11:10 AM**

Abstract ID: 38

The Influence of Weather Variables on Metered Water Consumption in a University Setting**Presenter: Sabrina Draude, University of British Columbia****Additional Authors:** *Dr Sabrina Draude, UBC and Professor Barbara Lence, UBC***11:10 AM - 11:30 AM**

Abstract ID: 100

Reliability Analysis of Future Water Supply for the North Salt Spring Waterworks District**Presenter: Craig Sutherland and Kuangyin Zhao, Kerr Wood Leidal Associates Ltd.****Additional Authors:****11:30 AM - 11:50 AM**

Abstract ID: 166

Collaborative Solutions: Advancing Water Infrastructure Projects Through the Progressive Design-Build Methodology**Presenter: Matthew Simard, Wildstone Construction Group****Additional Authors:** *Organization: Stantec (Frequent PDB Project Partner) - Speaker to be Confirmed*

10:30am – 12:00pm	R	Modelling and Decision-Making for Climate Change Adaptation <i>Moderators: Nadia Langenberg</i> <i>Speakers: Sujata Budhathoki, Kuangyin Zhao, Mohamed Elgendy, Matthew Chernos</i> 10:30 AM - 10:50 AM Abstract ID: 173 Long Duration Design Hyetograph Analysis for the East Calgary Regional Drainage Study Presenter: Kuangyin Zhao, Kerr Wood Leidal Associates Ltd Additional Authors: David Roche, M.Sc., P.Eng.(KWL); Bert van Duin, Ph.D., P.Eng.(City of Calgary); and Alexa Baker P.Eng. (City of Calgary) 10:50 AM - 11:10 AM Abstract ID: 136 A Coupled Process-Based Hydrological and Water Management Model for Collaborative Modelling to Evaluate the Cumulative Effects of Changes in Land Cover, Climate, and Water Management in the North Saskatchewan River Basin, Alberta Presenter: Matthew Chernos, MacDonald Hydrology Consultants Ltd. Additional Authors: Ryan MacDonald, MacHydro; Morgan Braaten, MacHydro; Devin Cairns, MacHydro; Mat Sedgwick, MacHydro 11:10 AM - 11:30 AM Abstract ID: 107 Climate Change Adaptation in Water Management: Insights, Gaps, and Future Directions Presenter: Mohamed Elgendy, McMaster University Additional Authors: Sonia Hassini, McMaster University; Paulin Coulibaly, McMaster University 11:30 AM - 11:50 AM Abstract ID: 35 Advancing Climate Adaptation in Canada Through Assessment of Impacts of Future Climate on Freshwater Basins Presenter: Sujata Budhathoki, Environment and Climate Change Canada Additional Authors: Zelalem Tesemma, ECCC; Frank Seglenieks, ECCC; Bruce Davison, ECCC	Salon C
12:00pm – 1:00pm	L	Lunch	Ballroom 2
1:00pm – 2:30pm	M	Protecting Aquatic Species, Ecology and Traditional Uses of Water Bodies <i>Moderators: Sylvie Spraakman</i> <i>Speakers: Jeff Hirvonen, Dan Greenacre, Madison Hill, Andre Zimmerman</i> 1:00 PM - 1:20 PM Abstract ID: 223 FAST: Advancing a Rapid Fish Passage Assessment Tool for Culvert Crossings Presenter: Jeff Hirvonen, GeoProcess Research Associates Additional Authors: Cailey McCutcheon, GeoProcess Research 1:20 PM - 1:40 PM Abstract ID: 168 Sand vs. Silt: Why We Cannot See All Sediment in Water Presenter: Andre Zimmerman, Northwest Hydraulic Consultants Additional Authors: Phil Osborne, Northwest Hydraulic Consultants; Griffin Fisk, Northwest Hydraulic Consultants 1:40 PM - 2:00 PM Abstract ID: 155 Watershed Webtools: Empowering Community-Led Salmon Recovery Efforts with Interactive Data Presenter: Dan Greenacre, Ecofish Research Ltd. Additional Authors: Nicholas Blumberg, Ecofish Research Ltd.; João Braga, Ecofish Research Ltd.; Bogdan Caradima, Ecofish Research Ltd.; Kent O'Neill, Nootka Sound Watershed Society; Nikki Pichert, Nootka Sound Watershed Society; Morgan Hocking, Ecofish Research Ltd. 2:00 PM - 2:20 PM Abstract ID: 160 Exploring a community-led framework for First Nation Source Water Protection Planning Presenter: Madison Hill, Ontario First Nations Technical Service Corporation Additional Authors: Dr. Deborah McGregor, Ph.D., McGregor Consulting, Whitefish River First Nation; Dr. Susan Chiblow, Ph.D., McGregor Consulting, Garden River First Nation; Erica Tropea, M.Env.Sc., OFNTSC; Madison Hill, MPEd, OFNTSC, Six Nations of the Grand River Territory	Meeting 1-3

1:00pm – 2:30pm

S

Floodplain Mapping for Flood and Climate Resilience - Case Studies from British Columbia

Moderators: Steve Litke

Speakers: Elisa Scordo, Jonathan Welke, Neil Peters, Faye Hirshfield

1:00 PM - 1:20 PM

Abstract ID: 78

Town of Princeton – Planning for an Extremely Uncertain Future

Presenter: Jonathan Welke, TRUE Consulting

Additional Authors: Predrag Prodanovic, Ph.D., P.Eng., TRUE Consulting

1:20 PM - 1:40 PM

Abstract ID: 119

Floodplain Mapping for Areas with Dikes – Lower Fraser River Case Study

Presenter: Neil Peters, Northwest Hydraulic Consultants

Additional Authors: Vanessa O'Connor, Northwest Hydraulic Consultants Ltd.

1:40 PM - 2:00 PM

Abstract ID: 199

Lessons learned from considering climate change in floodplain mapping studies across British Columbia

Presenter: Faye Hirshfield, Northwest Hydraulic Consultants

2:00 PM - 2:20 PM

Abstract ID: 235

Collaborative Approaches to Floodplain Mapping: Experience from the Nicola-Coldwater Rivers Flood Study in Central BC

Presenter: Elisa Scordo, BGC Engineering Inc.

Additional Authors: Kris Holm, BGC Engineering Inc.

1:00pm – 2:30pm

C

Industry and Water Resources Nexus

Moderators: Stephanie Smith

Speakers: Allison Matfin, Stefan Joyce, Amejan van Loenen, Lauren Thompson, Ross Phillips

1:00 PM - 1:20 PM

Abstract ID: 113

Hydrological Resiliency of Reclamation Landscapes to Future Climate Scenarios in the Athabasca Oil Sands Region

Co-Presenters: Lauren Thompson and Emily Pugh, Hatfield Consultants

Additional Authors: Steven Guenther, Hatfield Consultants

1:20 PM - 1:40 PM

Abstract ID: 131

Assessing Water Availability in Prairie Reservoirs for New Nuclear Power Generation Siting

Presenter: Ross Phillips, WSP Canada Inc.

Additional Authors: Ross Phillips, WSP; Curtis Hallborg, WSP; Greg Rose, HydroQuantica; Tebikachew Tariku, WSP; Golnoosh Babajamaaty, WSP; Jacoby Donnelly, WSP; Rebecca Koch, WSP; Getu Biftu, WSP

1:40 PM - 2:00 PM

Abstract ID: 133

Burton Flats Wildlife Enhancement: Engineering Nature-based Wetland Habitat in a Reservoir Drawdown Zone

Presenter: Stefan Joyce and Allison Matfin, KWL

Additional Authors: Harry Van Oort, BC Hydro

2:00 PM - 2:20 PM

Abstract ID: 89

Leveraging RTC-Tools and Delft-FEWS to Optimize OPG's Key Hydropower Facilities on the Niagara River

Presenter: Arnejan van Loenen, Deltares

Additional Authors: Frezer Awol, Ontario Power Generation (OPG); Bitu Analui, Deltares USA

Salon A

Salon B

*Moderators: Amanda Rust**Speakers: Ryan Langlois, Scott Hillaby, Luis Galindo, Joey Simoes***1:00 PM - 1:20 PM**

Abstract ID: 27

The Benefits and Performance of Natural Infrastructure: Canadian Prairie Perspectives and Global Applications**Presenter: Joey Simoes, International Institute For Sustainable Development***Additional Authors: Josée Méthot, IISD; Ashley Rawluk, IISD***1:20 PM - 1:40 PM**

Abstract ID: 149

A Nature Based Solution for Regulated Dikes in Canada**Presenter: Luis Galindo, Kerr Wood Leidal Associates Ltd.***Additional Authors: Stephen Mills, Kerr Wood Leidal Associates Ltd.***1:40 PM - 2:00 PM**

Abstract ID: 17

Integration of Natural Assets and Future Growth Plans - The Belvedere Master Drainage Plan Case Study**Presenter: Scott Hillaby, Dillon Consulting Limited***Additional Authors: Brier Reid, The City of Calgary***2:00 PM - 2:20 PM**

Abstract ID: 23

Flowing Towards Resilience: A Collaborative SWM and Flood Mitigation Strategy for the Sandwich South Planning Area in Southwestern Ontario**Presenter: Ryan Langlois, Dillon Consulting Limited**

2:30pm – 3:00pm

A

Break

Atrium and Lobby

3:00pm – 4:30pm

B

Closing Ceremony and Keynote*Speakers: Shaun Reimer*

Closing ceremony will include Student Presentation Award, notes from our sponsors and chairs, and our final keynote, Shaun Reimer, Section Head - Public Safety & Protection, Ministry of Water, Land, and Resource Stewardship, British Columbia.

Shaun will discuss "Water management challenges in the Okanagan under climate change and increasing use pressures".

Shaun Reimer is a professional engineer with the Ministry of Water, Land, Resource Stewardship and has worked in water licensing, Okanagan River management, and flood response, for the Province since 1995. He is currently the Head of the Public Safety and Protection Section in Penticton, responsible for operation of the Okanagan Lake Regulation System (OLRS) dams and dikes and which includes managing Okanagan Lake levels and Okanagan River flows.

Speakers: Shaun Reimer. Add bio to speakers page, and add picture into speakers page also.

Ballroom 2

5:00pm – 8:00pm

O

CSHS/NASH Social Event - brought to you by Aquatic Informatics

Join CSHS & NASH after the conference for some drinks and appies at a local brewery!

Cannery Brewing (198 Ellis St, Penticton)

Sponsored by Aquatics Informatics

