

Natural Channels Systems Conference - 2023
 26 Monday June 2023, Rozanski Hall, University of Guelph

Registration and Badges required

8:00 AM	8:45 AM	Registration, Coffee, Continental Breakfast, Rozanski Foyer	
8:45 AM	9:00 AM	Introductory Remarks - Room <i>Conference Co-Chairs</i>	
9:00 AM	10:15 AM	Keynote 1 - Room <i>Silvia D'Amelio, Trout Unlimited Canada</i>	
10:15 AM	10:40 AM	Coffee Break - Rozanski Foyer	
		Room 1	Room 2
10:40 AM	12:10 PM	Channeling Innovation: From ideas to implementation (pt 1) <i>Leads: Jason Krompart (Beacon Environmental) & Rhonneke Van Riezen (AECOM)</i> Towards an Integrated Approach to Natural Channel Decision Making: How data and modeling intertwine <i>Les Stanfield, Ecohealth Solutions</i> An Integrated Approach for Classification and Characterization of Watercourses and Headwater Drainage Features <i>John McDonald, Matrix Solutions Inc.</i> An Analytical Approach for Natural Channel Design Decision-making and Morphology Monitoring <i>Corey Dawson, Dalhousie University (Agricultural Campus)</i> Assessment of bed variability in Ontario streams <i>Bryce Molder, GEO Morphix Ltd.</i>	The Port Lands Flood Protection & Enabling Infrastructure Project: Waterfront Toronto, City of Toronto, Toronto & Region Conservation Authority <i>Lead: Shannon Baker (Waterfront Toronto)</i> 10:40 The Port Lands Flood Protection Infrastructure Project: Meaning Beyond the Channel <i>Netami Stuart, Waterfront Toronto</i> 10:50 Integrating Public Access With the New River System at the Port Lands Flood Protection and Enabling Infrastructure Project (PLFP) <i>Neil Budzinski, Michael Van Valkenburgh Associates Inc., Landscape Architects</i> 11:00 River channel and riparian wetland design considerations for the Port Lands Flood Protection Project (PLFP) <i>Martin Melchior, Interfluve</i> 11:10 Design and Construction of Risk Management Measures in the New Don River Valley <i>Joey Herrington, Waterfront Toronto</i> 11:20 Port Lands Flood Protection and Enabling Infrastructure Project: A Construction Perspective <i>David Kirkland, EllisDon</i> 11:30 Discussion
12:10 PM	1:20 PM	Lunch - Creelman Hall	

Monday's schedule continues onto next page

1:20 PM 3:00 PM	<p>Channeling Innovation: From ideas to implementation (pt 2) <i>Leads: Jason Krompart (Beacon Environmental) & Rhonneke Van Riezen (AECOM)</i></p> <p>13:20 * Cohesive Stream Boundaries of Southern Ontario: Characterization of Resistance to Erosion (What we're missing) <i>Cal Jefferies, GeoProcess Research Associates and University of Waterloo</i></p> <p>13:40 * Form Versus Bed Roughness: A Methodology Comparison of Southwestern Ontario Stream Designs <i>Chris Muirhead, GHD Limited</i></p> <p>14:00 Design of a Novel Bedload Transport Monitoring Station and Field Implementation in a Rural Stream in Southern Ontario <i>Matthew Iannetta, GeoProcess Research Associates</i></p> <p>14:20 Evaluating the use of action cameras to observe fish in shallow, ice-covered streams <i>Lindsay Davis, GEO Morphix Ltd.</i></p> <p>14:40 The Use of Drone Surveys in Fluvial Geomorphic Assessments and Channel Design <i>Ian Smith & Ahmed Siddiqui, GEI Consultants Ltd.</i></p>	<p>Overcoming Unexpected Challenges: Design, implementation & post-construction <i>Leads: Michael Lawson (GEO Morphix Ltd) & Jason Krompart (Beacon Environmental)</i></p> <p>13:20 Channel restoration in a hurry: emergency restoration after large train derailments <i>Jeffrey Doucette, GHD Limited</i></p> <p>13:40 After the Landslide – Lessons in Field Fit Design and Construction <i>Heather Amirault, Stantec Consulting Ltd.</i></p> <p>14:00 Restoring Habitat and a Natural Channel in a Gravel Extraction Area <i>Ed Gazendam, Water's Edge</i></p> <p>14:20 Anatomy of a Failed Stream Restoration Project in BC <i>Brad Fairley, 5 Smooth Stones Restoration</i></p> <p>14:40 Restoring Fish Passage in the Eagle River after 100 Years <i>Lucas Warner, 5 Smooth Stones Restoration Inc.</i></p>
3:00 PM 3:25 PM Coffee Break - Rozanski Foyer		
3:25 PM 5:15 PM	<p>Design Parameters: Balancing approaches and setting (pt 1) <i>Leads: Mariëtte Pushkar (Matrix Solutions Inc.), Cailey McCutcheon (GeoProcess Research Associates) & Imran Khan (Momentum Earth Sciences Ltd.)</i></p> <p>15:25 Erosion Thresholds Revisited: Benchmarking Common Methodologies Against Sediment Transport and Temporal Morphologic Data in Southern Ontario Streams <i>Ben Plumb, GeoProcess Research Associates</i></p> <p>15:55 Vegetation Impacts on Roughness and Stage Discharge Relationships in Small Vegetation Controlled Streams <i>Patrick Padovan, GEO Morphix</i></p> <p>16:15 The Times They Are A-Changing: Design Discharge Considerations in a Changing Climate <i>Scott Cowan, Stantec Consulting Ltd.</i></p> <p>16:35 Understanding the driving and resisting forces on the urbanized, high-energy, cobble-boulder bedded, Ellis Creek <i>Leif Burge, Stantec</i></p> <p>16:55 Gully, Ravine or Broad Valley? Important Differences for Natural Channel Design in Southern Ontario <i>Robin McKillop, Palmer</i></p>	<p>Success Through Infrastructure Failure: A review of natural channel restoration in urban systems <i>Leads: John Stille (Toronto and Region Conservation Authority) and Michael Hoy (City of Brampton)</i></p> <p>15:25 Integrating Urban Natural Channel Restoration and EcoPark Design: Solutions for Ageing Infrastructure and Outdated Practices <i>Clifton Coppolino & Karley Cianchino, Toronto and Region Conservation Authority & City of Brampton</i></p> <p>15:55 A Trip Down Memory Lane <i>Jeff Prince, Matrix Solutions</i></p> <p>16:15 Farewell Creek: A Design-Build Case Study in Achieving Natural Channel Goals <i>Ed Gazendam, Water's Edge</i></p> <p>16:35 Lessons Learned from Restoring Urban Streams in Metro Detroit <i>Rob Myllyoja, Environmental Consulting & Technology, Inc. (ECT)</i></p> <p>16:55 Urban Channel Design: Constraints, Opportunities and Lessons Learned <i>Mariëtte Pushkar, Matrix Solutions Inc.</i></p>
5:15 PM 6:15 PM Poster Session (speed round ~5:30-6:00) - Rozanski Foyer		
6:15 PM 7:45 PM Wine & Cheese - Rozanski Foyer		

*Early career presentation

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 27 Tuesday June 2023, Rozanski Hall, University of Guelph

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8:00 AM	8:45 AM	Registration, Coffee, Continental Breakfast, Rozanski Foyer	
8:45 AM	9:00 AM	Introductions - Room <i>Conference Co-Chairs</i>	
9:00 AM	11:00 AM	Invited Engagement <i>Gary Pritchard, 4 Directions</i>	
11:00 AM	11:20 AM	Coffee Break - Rozanski Foyer	
11:20 AM	12:45 PM	<p style="text-align: center;">Room 1</p> <p>Role of Machine Learning & Modelling in Fluvial Geomorphology <i>Leads: Adeyemi Olusola (York University) & Corey Dawson (Dalhousie University)</i></p> <p>11:20 * Predicting River Morphology Classification <i>Cody Kupferschmidt, University of Guelph</i></p> <p>11:40 Predicting river discharge characteristics using deep learning algorithms <i>Adeyemi Olusola, York University</i></p> <p>12:00 Performance Assessment of Permeable and Top-blocked Permeable Groins-in-series in Riverbank Protection and River Training, Using 2D/3D Hydrodynamic and Sediment Transport Modeling (TUFLOW): A Case Study along the Jamuna River, Bangladesh <i>Dr. Bahar SM, AHYDTECH Geomorphic Ltd.</i></p> <p>12:20 Integrated Watershed Modelling for Evaluating Cost Effectiveness of Natural Infrastructure for Mitigating Road Washouts in Parkland County, Alberta <i>Wanhong Yang, University of Guelph</i></p>	<p style="text-align: center;">Room 2</p> <p>Success Through Resilience: Planning for resilient municipal infrastructure (pt 1) <i>Leads: Hazel Breton, Daniel McCreery, Devin Coone & Geoff Cole (City of Toronto)</i></p> <p>11:20 Elements of a Toronto Geomorphic Systems Master Plan Environmental Assessment <i>Daniel McCreery; Rob Amos; Jacob Ursulak, City of Toronto and Aquafor Beech Ltd</i></p> <p>11:50 How Climate Change Will Impact Hydraulics and Erosion Rates in Toronto's Mimico Creek <i>David Kynaston, Aquafor Beech Limited</i></p> <p>12:20 Multi Objective Complex Channel Design – The Van Dusen Stream Project <i>Devin Coone; Bill Snodgrass; Emma Schiller, City of Toronto and Aquafor Beech Ltd</i></p> <p style="text-align: center;"><i>This session ends at 12:50</i></p>
12:45 PM	2:00 PM	Lunch - Creelman Hall	

2:00 PM	3:15 PM	Keynote 2 - room <i>Cynthia Graham, City of Hamilton</i>	
3:15 PM	3:30 PM	Coffee Break - Rozanski Foyer	
3:30 PM	5:10 PM	<p>Design Parameters: Balancing approaches and setting (pt 2) <i>Leads: Mari�ette Pushkar (Matrix Solutions Inc.) & Cailey McCutcheon (GeoProcess Research Associates)</i></p> <p>15:30 Channel realignment and terracing to address instability in agricultural channels with sand rich alluvium <i>Ben Miller, GEO Morphix Ltd.</i></p> <p>15:50 Designing in Balance using a Two-Stage Approach <i>Mark Hartley, Nottawasaga Valley Conservation Authority</i></p> <p>16:10 * Three Little Pigs: A Comparison of Wood, Strawbale and Natural Bank Toes in a Natural Channel Design <i>Erin Kelly, Stantec Consulting Ltd.</i></p> <p>16:30 Lessons Learned: Design Considerations for Long Term Stability and Function of Riffles in 'Natural' Channel Design <i>Chris Cummings, Matrix Solutions Inc.</i></p> <p>16:50 Post-Construction Monitoring for Natural Channels: Approaches and Considerations for Developing Effective Monitoring Programs * <i>Chase Konecny & Andrew Doherty, Stantec Consulting Ltd.</i></p>	<p>Success Through Resilience: Planning for resilient municipal infrastructure (pt 2) <i>Leads: Hazel Breton, Daniel McCreery, Devin Coone & Geoff Cole (City of Toronto)</i></p> <p>15:30 Two Emergency Watercourse Restoration Projects in the City of Toronto <i>Geoff Cole, City of Toronto</i></p> <p>16:00 Toronto Stream Projects – a Contractor’s Prerogative <i>George Zeppieri; Hazel Breton; Bill Snodgrass, Dynex Construction and City of Toronto</i></p> <p>16:30 Insights into Resilience from Toronto’s Stream Restoration Projects <i>Bill Snodgrass, City of Toronto</i></p> <p style="text-align: right;"><i>Discussion</i></p>
*Early career presentation			
6:30 PM	9:30 PM	Conference Banquet at the Cutten Club (ticket required)	

Natural Channels Systems Conference - 2023
 28 Wednesday June 2023, Rozanski Hall, University of Guelph

Registration and Badges required

8:30 AM	9:00 AM	Registration, Coffee, Continental Breakfast, Rozanski Foyer	
9:00 AM	10:15 AM	Keynote 3 - Room <i>Peter Wilcock, Utah State University</i>	
10:15 AM	10:45 AM	Extended Coffee Break + snacks - Rozanski Foyer	
		Room 1	Room 2
10:45 AM	12:05 PM	<p>Ecohydraulics in Design: Fish passage and habitat suitability (pt 1)</p> <p><i>Leads: Paul Villard, Lindsay Davis & John Tweedie (GEO Morphix Ltd.)</i></p> <p>10:45 Restoring Atlantic Salmon to Lake Ontario: Current status of fish passage in key tributaries <i>Mark Heaton, Ontario Streams</i></p> <p>11:05 * Evaluating the swimming ability of small-bodied schooling fish for better fish passage design <i>Kendra Vorenkamp, SUNY University at Buffalo</i></p> <p>11:25 * Process-based restoration of salmon spawning habitat at a lake outlet <i>Megan Lun, University of Waterloo</i></p> <p>11:45 Evaluating fish passage through a sequence of modified rock weirs <i>Josie Mielhausen, GeoProcess Research Associates</i></p>	<p>Stream Power Based Approaches to Watershed Management</p> <p><i>Leads: Sally Betts (Credit Valley Conservation) & Christina Bright (Toronto and Region Conservation Authority)</i></p> <p>10:45 Influence of Land Use Change on Long-Term Hydraulic Geometry of Stream Channels: The Case for Southern Ontario, Canada <i>Joseph R Desloges, University of Toronto</i></p> <p>11:05 Using stream power to investigate sediment transport patterns across the Credit River watershed <i>Sally Betts, Credit Valley Conservation</i></p> <p>11:25 Quantifying Erosion Potential in the Watershed Planning Process using a Stream Power Based Approach in TRCA Watersheds <i>Christina Bright, Toronto and Region Conservation Authority</i></p> <p>11:45 * Updates to SPIN: A tool for watershed-scale erosion sensitivity analysis in urban rivers using a stream power approach <i>Priyanka Hire, McMaster University</i></p>
12:05 PM	12:15 PM	Bio Break	
12:15 PM	1:15 PM	<p>Ecohydraulics in Design: Fish passage and habitat suitability (pt 2)</p> <p><i>Leads: Paul Villard, Lindsay Davis & John Tweedie (GEO Morphix Ltd.)</i></p> <p>12:15 Restoring Fish Passage in Sixteen Mile Creek - A 10 year Restoration Plan for Drumquin Park, Milton <i>Alex Meeker, Conservation Halton</i></p> <p>12:35 The effectiveness of vortex rock weirs as design elements for smaller streams in Toronto and York Region <i>John Tweedie, GEO Morphix Ltd.</i></p> <p>12:55 Balancing Stream Corridor Design: Providing Greater Variability and Resilience versus Optimization for Species or Community Specific Ecological Targets <i>Paul Villard, GEO Morphix Ltd.</i></p>	<p>Building Resilient Watersheds as Natural Infrastructure for Climate Change Adaptation</p> <p><i>Leads: Roger Phillips (Matrix Solutions Inc. & University of Toronto), Joanna Eyquem (Intact Centre on Climate Adaptation, University of Waterloo) & Quentin Chiotti (Matrix Solutions Inc.)</i></p> <p>12:15 Towards development of evidence-based guidelines for nature-based solutions to manage flood and erosion risk in Canadian river systems <i>Sean Ferguson, National Research Council Canada</i></p> <p>12:35 Nottawasaga River Restoration Program: A case study in applying river morphology-based solutions for implementing large-scale fish habitat restoration <i>Fred Dobbs, Nottawasaga Valley Conservation Authority</i></p> <p>12:55 "Scaling up" Nature-based Solutions at the right scale <i>Joanna Eyquem, Intact Centre on Climate Adaptation</i></p>
1:15 PM	1:45 PM	Presentation Awards and Closing Remarks <i>Conference Co-Chairs</i>	