Natural Channel 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	***9:15 AM***	**Introductory Remarks - Rozanski Hall Rm 101** *Conference Co-Chairs*	
9:15 AM	***10:15 AM***	**Implementing with balance: a restoration perspective** ***Invited keynote by Silvia D'Amelio, Trout Unlimited Canada - Rozanski Hall Rm 101***	
10:15 AM	***10:40 AM***	**Coffee Break - Rozanski Foyer**	
10:40 AM	***12:10 PM***	***Rozanski Hall Rm 101*** **Channeling Innovation: From ideas to implementation (pt 1)** *Leads: Jason Krompart (Beacon Environmental) & Rhonneke Van Riezen (AECOM)* 10:40 Towards an Integrated Approach to Natural Channel Decision Making: How data and modeling intertwine *Les Stanfield, Ecohealth Solutions* 11:10 An Integrated Approach for Classification and Characterization of Watercourses and Headwater Drainage Features *John McDonald, Matrix Solutions Inc.* 11:30 * An Analytical Approach for Natural Channel Design Decision-making and Morphology Monitoring *Corey Dawson, Dalhousie University (Agricultural Campus)* 11:50 Assessment of bed variability in Ontario streams *Bryce Molder, GEO Morphix Ltd.*	***Rozanski Hall Rm 103*** **The Port Lands Flood Protection & Enabling Infrastructure Project: Waterfront Toronto, City of Toronto, Toronto & Region Conservation Authority** *Lead: Shannon Baker (Waterfront Toronto)* 10:40 The Port Lands Flood Protection Infrastructure Project: Meaning Beyond the Channel *Netami Stuart, Waterfront Toronto* 10:50 Integrating Public Access With the New River System at the Port Lands Flood Protection and Enabling Infrastructure Project (PLFP) *Neil Budzinski, Michael Van Valkenburgh Associates Inc., Landscape Architects* 11:00 River channel and riparian wetland design considerations for the Port Lands Flood Protection Project (PLFP) *Martin Melchior, Interfluve* 11:10 Design and Construction of Risk Management Measures in the New Don River Valley *Joey Herrington, Waterfront Toronto* 11:20 Port Lands Flood Protection and Enabling Infrastructure Project: A Construction Perspective *David Kirkland, EllisDon* 11:30 *Discussion*
12:10 PM	***1:20 PM***	**Lunch - Creelman Hall**	

			Rozanski Hall Rm 101		Rozanski Hall Rm 103
1:20 PM	*3:00 PM*		**Channeling Innovation: From ideas to implementation (pt 2)** *Leads: Jason Krompart (Beacon Environmental) & Rhonneke Van Riezen (AECOM)*		**Overcoming Unexpected Challenges: Design, implementation & post-construction** *Leads: Michael Lawson (GEO Morphix Ltd) & Jason Krompart (Beacon Environmental)*
		13:20	* Cohesive Stream Boundaries of Southern Ontario: Characterization of Resistance to Erosion (What we're missing) *Cal Jefferies, GeoProcess Research Associates and University of Waterloo*	13:20	Channel restoration in a hurry: emergency restoration after large train derailments *Dan Murray, GHD Limited*
		13:40	* Form Versus Bed Roughness: A Methodology Comparison of Southwestern Ontario Stream Designs *Chris Muirhead, GHD Limited*	13:40	After the Landslide – Lessons in Field Fit Design and Construction *Heather Amirault, Stantec Consulting Ltd.*
		14:00	Design of a Novel Bedload Transport Monitoring Station and Field Implementation in a Rural Stream in Southern Ontario *Matthew Iannetta, GeoProcess Research Associates*	14:00	Restoring Habitat and a Natural Channel in a Gravel Extraction Area *Ed Gazendam, Water's Edge*
		14:20	Evaluating the use of action cameras to observe fish in shallow, ice-covered streams *Lindsay Davis, GEO Morphix Ltd.*	14:20	Anatomy of a Failed Stream Restoration Project in BC *Brad Fairley, 5 Smooth Stones Restoration*
		14:40	The Use of Drone Surveys in Fluvial Geomorphic Assessments and Channel Design *Ian Smith & Ahmed Siddiqui, GEI Consultants Ltd.*	14:40	Restoring Fish Passage in the Eagle River after 100 Years *Lucas Warner, 5 Smooth Stones Restoration Inc.*
3:00 PM	*3:25 PM*		**Coffee Break - Rozanski Foyer**		
3:25 PM	*5:15 PM*		**Design Parameters: Balancing approaches and setting (pt 1)** *Leads: Cailey McCutcheon (GeoProcess Research Associates) & Imran Khan (Momentum Earth Sciences Ltd.)*		**Success Through Infrastructure Failure: A review of natural channel restoration in urban systems** *Leads: John Stille (Toronto and Region Conservation Authority) & Dean Woolley (Active Innovation Research Inc.)*
		15:25	Erosion Thresholds Revisited: Benchmarking Common Methodologies Against Sediment Transport and Temporal Morphologic Data in Southern Ontario Streams *Ben Plumb, GeoProcess Research Associates*	15:25	Integrating Urban Natural Channel Restoration and EcoPark Design: Solutions for Ageing Infrastructure and Outdated Practices *Clifton Coppolino & Karley Cianchino, Toronto and Region Conservation Authority & City of Brampton*
		15:55	Vegetation Impacts on Roughness and Stage Discharge Relationships in Small Vegetation Controlled Streams *Patrick Padovan, GEO Morphix*	15:55	A Trip Down Memory Lane: Insight Gained and Lessons Learned *Jeff Prince, Matrix Solutions*
		16:15	The Times They Are A-Changing: Design Discharge Considerations in a Changing Climate *Scott Cowan, Stantec Consulting Ltd.*	16:15	Farewell Creek: A Design-Build Case Study in Achieving Natural Channel Goals *Ed Gazendam, Water's Edge*
		16:35	Understanding the driving and resisting forces on the urbanized, high-energy, cobble-boulder bedded, Ellis Creek *Leif Burge, Stantec*	16:35	Lessons Learned from Restoring Urban Streams in Metro Detroit *Rob Myllyoja, Environmental Consulting & Technology, Inc. (ECT)*
		16:55	Lessons Learned: Design Considerations for Long Term Stability and Function of Riffles in 'Natural' Channel Design *Chris Cummings, Matrix Solutions Inc.*	16:55	Urban Channel Design: Constraints, Opportunities and Lessons Learned *Mariette Pushkar, Matrix Solutions Inc.*
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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Poster Session - Rozanski Foyer

5:15 PM *6:15 PM* ***Full Session***

Speed Session Round - Hear poster presenters give a ~3 minute overview of their work

5:30 PM *5:35 PM* * A river's connective tissue: Lab observations of particle pathways and riffle formation during floods
Lukas Mueller, University of Waterloo

5:35 PM *5:40 PM* Modelling the effects of urbanization on river channel morphology
Victoria Barlow, University of Western Ontario

5:40 PM *5:45 PM* * Investigating River Ice Thickness and Analyzing Ice Breakup Flooding Events for Canadian Rivers
Karl Grambow, University of Guelph

5:45 PM *5:50 PM* * Amaolo Nature Sanctuary Stream and Floodplain Mapping and Restoration Design for the Hamilton Naturalists' Club
Camille Chouinard, Niagara College

5:45 PM *5:50 PM* * Investigating River Ice Thickness and Analyzing Ice Breakup Flooding Events for Canadian Rivers
Karl Grambow, University of Guelph

No speed session Investigating ice-impacted fluvial processes in a small riffle-pool sequence in Southern Ontario
Karine Smith, University of Guelph

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27 Tuesday June 2023, Rozanski Hall, University of Guelph

Registration and Badges required

8:00 AM	***8:50 AM***		**Registration, Coffee, Continental Breakfast, Rozanski Foyer**			
8:50 AM	***9:00 AM***		**Introductions - Rozanski Hall Rm 101** *Conference Co-Chairs*			
9:00 AM	***11:00 AM***		**Is Western Conservation still harming Indigenous Peoples?** ***Invited engagemnt from Gary Pritchard, 4 Directions*** ***Rozanski Hall Rm 101***			
11:00 AM	***11:20 AM***		**Coffee Break - Rozanski Foyer**			
11:20 AM	***12:45 PM***		***Rozanski Hall Rm 101*** **Role of Machine Learning & Modelling in Fluvial Geomorphology** *Leads: Adeyemi Olusola (York University) & Corey Dawson (Dalhousie University)*		***Rozanski Hall Rm 103*** **Success Through Resilience: Planning for resilient municipal infrastructure (pt 1)** *Leads: Hazel Breton, Daniel McCreery, Devin Coone & Geoff Cole (City of Toronto)*	
		11:20	* Predicting River Morphology Classification *Cody Kupferschmidt, University of Guelph*	11:20	Elements of a Toronto Geomorphic Systems Master Plan Environmental Assessment *Daniel McCreery; Rob Amos; Jacob Ursulak, City of Toronto and Aquafor Beech Ltd*	
		11:40	Predicting river discharge characteristics using deep learning algorithms *Adeyemi Olusola, York University*	11:50	How Climate Change Will Impact Hydraulics and Erosion Rates in Toronto's Mimico Creek *David Kynaston, Aquafor Beech Limited*	
		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 *Dr. Bahar SM, AHYDTECH Geomorphic Ltd.*	12:20	Multi Objective Complex Channel Design – The Van Dusen Stream Project *Devin Coone; Bill Snodgrass; Emma Schiller, City of Toronto and Aquafor Beech Ltd*	
		12:20	Integrated Watershed Modelling for Evaluating Cost Effectiveness of Natural Infrastructure for Mitigating Road Washouts in Parkland County, Alberta *Wanhong Yang, University of Guelph*		*This session ends at 12:50*	
12:45 PM	***2:00 PM***		**Lunch - Creelman Hall**			

2:00 PM	***3:05 PM***		**Stronger, Together**			
			Invited keynote by Cynthia Graham, City of Hamilton - Rozanski Hall Rm 101			
3:05 PM	***3:30 PM***		**Coffee Break - Rozanski Foyer**			
			Rozanski Hall Rm 101		***Rozanski Hall Rm 103***	
3:30 PM	***5:10 PM***		**Design Parameters: Balancing approaches and setting (pt 2)**		**Success Through Resilience: Planning for resilient municipal infrastructure (pt 2)**	
			Leads: Cailey McCutcheon (GeoProcess Research Associates) & Imran Khan (Momentum Earth Sciences Ltd.)		*Leads: Hazel Breton, Daniel McCreery, Devin Coone & Geoff Cole (City of Toronto)*	
		15:30	Channel realignment and terracing to address instability in agricultural channels with sand rich alluvium	15:30	Two Emergency Watercourse Restoration Projects in the City of Toronto	
			Ben Miller, GEO Morphix Ltd.		*Geoff Cole, City of Toronto*	
		15:50	Designing in Balance using a Two-Stage Approach	16:00	Toronto Stream Projects – a Contractor's Prerogative	
			Mark Hartley, Nottawasaga Valley Conservation Authority		*George Zeppieri; Hazel Breton; Bill Snodgrass, Dynex Construction and City of Toronto*	
		16:10 *	Three Little Pigs: A Comparison of Wood, Strawbale and Natural Bank Toes in a Natural Channel Design	16:30	Insights into Resilience from Toronto's Stream Restoration Projects	
			Erin Kelly, Stantec Consulting Ltd.		*Bill Snodgrass, City of Toronto*	
		16:30	Gully, Ravine or Broad Valley? Important Differences for Natural Channel Design in Southern Ontario			
			Robin McKillop, Palmer		*Discussion*	
		16:50	Post-Construction Monitoring for Natural Channels: Approaches and Considerations for Developing Effective Monitoring Programs			
		*	*Chase Konecny & Andrew Doherty, Stantec Consulting Ltd.*			
6:30 PM	***9:30 PM***		**Conference Banquet at the Cutten Club (ticket required)**			

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Natural Channel Systems Conference - 2023

28 Wednesday June 2023, Rozanski Hall, University of Guelph

Registration and Badges required

8:30 AM	***9:10 AM***		**Registration, Coffee, Continental Breakfast, Rozanski Foyer**		
9:10 AM	***10:15 AM***		**Triple Beam: Balancing water and sediment drivers with channel behavior and project goals** ***Invited keynote by Peter Wilcock, Utah State University - Rozanski Hall Rm 101***		
10:15 AM	***10:45 AM***		**Extended Coffee Break + snacks - Rozanski Foyer**		
			Rozanski Hall Rm 101		***Rozanski Hall Rm 103***
10:45 AM	***12:05 PM***		**Ecohydraulics in Design: Fish passage and habitat suitability (pt 1)** *Leads: Paul Villard, Lindsay Davis & John Tweedie (GEO Morphix Ltd.)*		**Stream Power Based Approaches to Watershed Management** *Leads: Sally Betts (Credit Valley Conservation) & Christina Bright (Toronto and Region Conservation Authority)*
		10:45	Restoring Atlantic Salmon to Lake Ontario: Current status of fish passage in key tributaries *Mark Heaton, Ontario Streams*	10:45	Influence of Land Use Change on Long-Term Hydraulic Geometry of Stream Channels: The Case for Southern Ontario, Canada *Joseph R Desloges, University of Toronto*
		11:05 *	Evaluating the swimming ability of small-bodied schooling fish for better fish passage design *Kendra Vorenkamp, SUNY University at Buffalo*	11:05	Using stream power to investigate sediment transport patterns across the Credit River watershed *Sally Betts, Credit Valley Conservation*
		11:25 *	Process-based restoration of salmon spawning habitat at a lake outlet *Megan Iun, University of Waterloo*	11:25	Quantifying Erosion Potential in the Watershed Planning Process using a Stream Power Based Approach in TRCA Watersheds *Christina Bright, Toronto and Region Conservation Authority*
		11:45	Evaluating fish passage through a sequence of modified rock weirs *Josie Mielhausen, GeoProcess Research Associates*	11:45 *	Updates to SPIN: A tool for watershed-scale erosion sensitivity analysis in urban rivers using a stream power approach *Priyanka Hire, McMaster University*
12:05 PM	***12:15 PM***		**Bio Break**		
12:15 PM	***1:15 PM***		**Ecohydraulics in Design: Fish passage and habitat suitability (pt 2)** *Leads: Paul Villard, Lindsay Davis & John Tweedie (GEO Morphix Ltd.)*		**Building Resilient Watersheds as Natural Infrastructure for Climate Change Adaptation** *Leads: Roger Phillips (Matrix Solutions Inc. & University of Toronto), Joanna Eyquem (Intact Centre on Climate Adaptation, University of Waterloo) & Quentin Chiotti (Matrix Solutions Inc.)*
		12:15	Restoring Fish Passage in Sixteen Mile Creek - A 10 year Restoration Plan for Drumquin Park, Milton *Alex Meeker, Conservation Halton*	12:15	Towards development of evidence-based guidelines for nature-based solutions to manage flood and erosion risk in Canadian river systems *Sean Ferguson, National Research Council Canada*
		12:35	The effectiveness of vortex rock weirs as design elements for smaller streams in Toronto and York Region *John Tweedie, GEO Morphix Ltd.*	12:35	Nottawasaga River Restoration Program: A case study in applying river morphology-based solutions for implementing large-scale fish habitat restoration *Fred Dobbs, Nottawasaga Valley Conservation Authority*
		12:55	Balancing Stream Corridor Design: Providing Greater Variability and Resilience versus Optimization for Species or Community Specific Ecological Targets *Paul Villard, GEO Morphix Ltd.*	12:55	"Scaling up" Nature-based Solutions at the right scale *Joanna Eyquem, Intact Centre on Climate Adaptation*
1:15 PM	***1:45 PM***		**Presentation Awards, Thank Yous and Closing Remarks - Rozanski Hall Rm 101** *Conference Co-Chairs*		

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