

PROGRAM
SECOND INTERNATIONAL
CONFERENCE ON
NATURAL CHANNEL SYSTEMS

**STREAM
CORRIDORS
ADAPTIVE
MANAGEMENT
AND
DESIGN**



MARCH 1-4, 1999 NIAGARA FALLS, CANADA



Environment
Canada

Environnement
Canada

**GREAT LAKES 2000
CLEANUP FUND**



**FONDS D'ASSAINISSEMENT
DES GRANDS LACS 2000**

The Great Lakes 2000 Cleanup Fund is a component of the Federal Government's Great Lakes 2000 program. The Cleanup Fund provides resources to demonstrate and implement technologies and techniques to assist in the remediation of areas of concern and other priority areas in the Great Lakes. This program was sponsored by the Great Lakes 2000 Cleanup Fund. It should be acknowledged that all the views reflected at the conference do not necessarily reflect the views of the Cleanup Fund or Environment Canada.

MONDAY, MARCH 1, 1999 - Plenary Session starts 9:00 am ... Oakes South Ballroom

■ 9:00 am: Opening Remarks

Moderator: Vicki Barron, *General Manager, Credit Valley Conservation*

■ 9:10 am: Welcome to Ontario

Gail Beggs, *Assistant Deputy Minister, Natural Resources Management Division, Ontario Ministry of Natural Resources*

■ 9:40 am: River Restoration and Management in Australia

Nick Schofield, *Land & Water Resources, Research & Development Corporation, Australia*

BREAK: 10:20 am

■ 10:40 am: Urban Stream Restoration

Don Rosenboom, *Illinois State Water Survey*

■ 11:40 am: Natural Fringe Benefits: Stream Corridors in Danish Agricultural Landscape

Bent Madsen, *Ministry of Environment and Energy, Denmark*

■ 12:00: Luncheon Speaker Dr. Gerry Galloway Jr. "Floodplain Management into the 21st Century"

Executive Secretary to the International Joint Commission, U.S. Section ... Oakes North Room

CONCURRENT SESSIONS

<i>Hennepin North Room</i>	<i>Oakes South Room</i>	<i>Hennepin South Room</i>	<i>Canadiana Room</i>
SESSION 1 - Terms of Reference- Financing	SESSION 2 - Community Involvement	SESSION 3 - Sustainability	SESSION 4 - Case Studies
Mike D'Andrea, City of Toronto "Terms of Reference for Natural/Engineered Channels"	2:00 David Caldenisi, Ontario Streams "Designing and Managing Communication Channels"	2:00 Deb Martin Downs, Gartner Lee Ltd. "Restoring Sustainability in the Don Watershed"	2:00 Rob Steele, Natural Resource Solutions Inc. "Environmental Restoration of Stream Habitats - Variations in Approach based on Physiographic Region."
Bill Snodgrass, Ministry of Transportation "Municipal Asset Management - Cost Estimation, Financing and Ecological Assessment of Natural and Engineered Channels"	2:25 Vicki Barron, Credit Valley Conservation "Are we Prepared & Is the Community Ready for Adaptive Management of Our Stream Corridors"	2:25 Ivan Lorant, Lorant Consulting Ltd. "Stream Erosion and the Law"	2:25 Shawn Taylor, Habitat Works! / Dillon Cons. "A Cross Canada Perspective on Natural Channel Design"
Kevin Trimble, Beak International Inc. "Considerations in the Development of Holistic Terms of Reference for Stream Projects"	2:50 Larry Mellors, Brandtford Steelheaders "Community Involvement in Rehabilitation Projects and Fisheries Management Plans"	2:50 Lamoire Alexander, Marshall Macklin Monaghan Ltd. "Little Etobicoke Creek"	2:50 Doug Clark, EcoTec Environmental Consult. "Aquatic Habitat Compensation for Bridge Construction Projects"

BREAK: 3:15 pm

<i>Hennepin North Room</i>	<i>Oakes South Room</i>	<i>Hennepin South Room</i>	<i>Canadiana Room</i>
SESSION 5 - Obstacles	SESSION 6 - Planning and Land Use	SESSION 7 - Watershed Management	SESSION 8 - Legal & Institutional Aspects
Charles Hendry, Ontario Ministry of Natural Resources "Abitibi Canyon GS Tailwater Habitat Study"	3:30 Anne Yagi, Ontario MNR "Post Assessment of the Shriner's Creek Ecological Design, Niagara Falls, Ontario: Did Past Planning Goals Meet the Public Expectations?"	3:30 Michelle Jessop, Watershed Report Card "Watershed Management from a Community Perspective"	3:30 Theresa McClenaghan, Canadian Environmental Law Association "Common Law Aspects of Watercourse Management"
Harris Martin, BCM Engineers "Stabilization of Streambanks Adjacent to Landfills at a Military Facility"	3:55 Norm Smith, Ontario Ministry of Natural Resources "Grand River Fisheries Management Plan - A Cooperative Approach"	3:55 Brian Trushinski, City of Waterloo "Watershed Management - From Idea to Design"	3:55 Theresa McClenaghan, <i>continued</i>
Ghislain Brunet, Maccaferri Canada Ltd. "Bank Stabilization with Ecological Engineering"	4:20 Leon Carl, Ontario Ministry of Natural Resources "Riverine Science Requirements"	4:20 Chiadih Chang, Ontario MNR "Information Systems to Support Watershed Management in the Moose River"	4:20 TBA

■ Wine and Cheese Social and Panel Discussion, 5:30 - 7:30 pm ... Oakes North Room

"Applying Adaptive Environmental Management to Stream Corridors Management"

John FitzGibbon, Executive Director, School of Rural Planning and Development, University of Guelph will present an overview of AEM and how it applies to Stream Corridor Management. An expert panel will then discuss AEM framework, identify how it works, and address issues of uncertainty, risks and legal concepts. Participating practitioners will be asked how they mitigate risks in design approaches, and how potential consequences associated with failure are considered.

TUESDAY, MARCH 2, 1999 - Plenary Session 8:30 am ... Oakes South Room

■ 8:30 am: Floodplain Restoration in the Upper Rhine River, Ulrike Pfarr, Upper Rhine River, Germany

■ 9:00 am: Attractors and Phase Shifts in Aquatic Ecosystems, Henry Regier, Professor Emeritus, U. of Toronto

BREAK: 9:30 am

CONCURRENT SESSIONS

<i>Hennepin North Room</i>	<i>Oakes South Room</i>	<i>Hennepin South Room</i>	<i>Canadiana Room</i>
SESSION 9 - Design Applications	SESSION 10 - Environmental Restoration	SESSION 11 - In The Field	SESSION 12 - Innovations
Martin Doyle, Inter-Fluve Inc. "River Restoration Channel Design: Back to Basics of Dominant Discharge"	9:45 Bob Newbury, Newbury Hydraulics "The Structure and Habitat of Running Water"	9:45 Peter Ashmore, University of Western Ontario "Pools, Riffles and Channel Morphology of Till Streams..."	9:45 Tai Bui, Weslake Inc. "Towards a Practical Approach for Applied River Morphology"
Mark Hartley, Grand River CA "Bedform Sequence as Design Component for Natural Channels in Southern Ontario"	10:10 Bob Morris, CVC Mitch Wilson, Wellington Stewardship Council "Hillsburg Natural Channel Project"	10:10 John Parish, Parish Geomorphic "Field Requirements for the Preparation of Channel Designs"	10:10 Bahram Gharabaghi, U of Guelph "Numerical Simulation of Flow in Open Channels..."
Peter Ashmore, University of Western Ontario "Rational Regime Equations and Channel Design - What Would We do Without Rosgen?"	10:35 Glenn Harrington, Harrington & Hoyle "Naturalization Projects in Southern Ontario..."	10:35 Les Stanfield, Ontario MNR "Hydrologic vs. Physical Features: The Best Approach to Assessing the Bankfull Channel Dimensions"	10:35 Craig MacRae, Aquafor Beech Ltd. "Assessing the Impact of Urbanization on Channel Morphology"

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SESSION 13 - Riparian Corridors	SESSION 14 - Monitoring, Field Methods	SESSION 15 - Innovations in Environmental Restoration	SESSION 16 - Urban Issues
David Stephenson, Natural Resources Solutions Inc. "Evaluating the Function and Effectiveness of Linear Riparian Habitats as Ecological Corridors"	11:00 Kevin McKenzie, Golders Associates Ltd. "Water Intake Design in a Dynamic Delta Environment"	11:00 Robbin Sotir, Robbin B. Sotir & Associates "Re-Building Environmental Function in Stream Channels"	11:00 Larry Thompson, Thompson Flow Investigations Inc. "Some Techniques For Accurate Short/Medium Term Streamflow Monitoring"
Bent Madsen, Ministry of Environment and Energy "Recent Trends for River Restoration in Denmark"	11:25 Bill Annable, Department of Earth Sciences, U of Waterloo "On the Design of Natural Channels: Decisions, Direction and Design"	11:25 Michael Benner, Niagara Peninsula CA "Twenty Mile Creek Geomorphology Study"	11:25 Raymond Guther, Philips Planning and Engineering Ltd. "Can Online Stormwater Management and Natural..."
Jack Imhof, Ontario MNR "A Procedure for Establishing a Riparian Zone Classification System for Management"	11:50 Les Stanfield, Ontario MNR "An Objective and Repeatable Methodology for Assessing Productive Capacity of Streams"	11:50 Don Weatherbe, Donald G. Weatherbe Associates Inc. "Temperature Model Application to Evaluate Stream Natural..."	11:50 Chris Estes, City of Charlotte "Application of Morphologic Characterization to Urban Watershed for Developing..."

LUNCH: 12:15 ... Oakes North Room

<i>Hennepin North Room</i>	<i>Oakes South Room</i>	<i>Hennepin South Room</i>	<i>Canadiana Room</i>
SESSION 17 - Cost - Benefit of Using Natural Materials	SESSION 18 - Land Use	SESSION 19 - Stream Corridors	SESSION 20 - Environmental Restoration
Diane Dupont, Brock University "An Economic Analysis of the Benefits of Stream Rehabilitation"	1:45 Martin Doyle, Inter-Fluve "Use of Mobile and Immobile Channel Boundaries for Bank Stabilization at Salmon Creek..."	1:45 Anne Yagi, Ontario MNR "Combining Golf Course Re-Design with Natural Channels..."	1:45 Jan Den Dulk, EcoTec Environmental Consultants "Kingfisher Creek - A Watershed Restoration Project"
Tim Patterson, Environment Canada "Cost Comparison of Documented Use of Bioengineering and Hard Structures..."	2:10 Andreas Stenzel, Agra Earth & Environmental Ltd. "Integrating Conventional Engineering, Ecological Function and Aesthetic Value to Design..."	2:10 Jane Bowles, University of Western Ontario "Wildlife Corridors"	2:10 Steve Phillips, Oxbow River and Stream Restoration "Recovery Potential of a modified stream channel in the Eastern Corn Belt Plain Ecoregion of Ohio"
Mike Fortin, Consulting Economist "The Evaluation of Channel Design Options"	2:35 Ray Tufgar, Totten Sims Hubicki "Cooksville Creek Rehabilitation Plan for a Rockbed Stream in an Urban Setting"	2:35 Nick Schofield, Land Water Resources "River Management to Protect the Great Barrier Reef"	2:35 Brad Glassman, Upper Thames River CA "Restoring Fish Habitat Using Vortex Rock Weirs"

BREAK: 3:00 pm

FINAL PLENARY 3:15 - 4:25 pm ... Oakes South Room

■ A Future Perspective on North America's Freshwater Ecosystems, Bob Naiman, University of Washington

■ Stream Use Management - A Call for Action, Henry Regier, University of Toronto

■ Closing Remarks, Vicki Barron, Credit Valley Conservation

MARCH 3 AND 4 TRAINING SESSIONS: Lunch will be served in Oakes North Room on both days.

WEDNESDAY, MARCH 3:

<i>Auditorium</i>	<i>Hennepin South Room</i>	<i>Hennepin North Room</i>
8:30 - 10:00 am Aquatic Biology and Stream Systems Instructors: Jack Imhof, M.Sc., and Kevin Trimble, M.Sc.	8:30 - 10:00 am Fluvial Geomorphology and Stream Systems Instructors: John Parish, M.A. and Ray Kostaschuk, Ph.D.	8:30 - 10:00 am Engineering and Stream Systems Instructors: Ray Tufgar, M.Eng., P.Eng., MBA, and Chris Doherty, P. Eng.
BREAK: 10:00		
10:30 - 12:00 Aquatic Biology and Stream Systems Instructors: Jack Imhof, M.Sc., and Kevin Trimble, M.Sc.	10:30 - 12:00 Fluvial Geomorphology and Stream Systems Instructors: John Parish, M.A. and Ray Kostaschuk, Ph.D.	10:30 - 12:00 Engineering and Stream Systems Instructors: Ray Tufgar, M.Eng., P.Eng., MBA, and Chris Doherty, P. Eng.
LUNCH: 12:00 ... Oakes North Room		
1:30 pm Aquatic Biology and Natural Channel Design Instructors: Jack Imhof, M.Sc., and Kevin Trimble, M.Sc.	1:30 pm Fluvial Geomorphology & Natural Channel Design Instructors: John Parish, M.A., and Ray Kostaschuk, Ph.D.	1:30 pm Engineering and Natural Channel Design Instructors: Ray Tufgar, M.Eng., P.Eng., MBA, and Chris Doherty, P. Eng.

THURSDAY, MARCH 4:

<i>Auditorium</i>	<i>Hennepin South Room</i>	<i>Hennepin North Room</i>
9:00 am Integrating Disciplinary Requirements in an Adaptive Design Process Instructors: Jack Imhof, John Parish, Ray Tufgar	9:00 am Soil Bioengineering, Slope and Streambank Stabilization and Restoration Instructor: Robbin B. Sotir	9:00 am Stream Assessment Protocol Instructors: Les Stanfield, Mike Stoneman (Note: this is a full day session)
LUNCH: 12:00		
1:15 pm Stream Corridor Allocation Approaches Instructors: Judy Sullivan, P.Eng., Mike Tanos, P.Eng.	1:15 pm Stormwater Management and Streambank Erosion Instructors: Dr. Craig MacRae, Dave Maunder, M.Sc., P.Eng.	

This conference is sponsored by the following agencies (listed in alphabetical order):

American Fisheries Society, Ontario Chapter
Canadian Water Resources Association
City of Toronto
Credit Valley Conservation
Environment Canada, Great Lakes 2000
Cleanup Fund
Grand River Conservation Authority
International Erosion Control Association
Niagara Peninsula Conservation Authority
Ontario Ministry of the Environment
Ontario Ministry of Natural Resources
Ontario Ministry of Transportation
Soil and Water Conservation Society,
Ontario Chapter
Toronto Region Conservation Authority
The Watershed Science Centre

Supporting Agencies:

Canadian Society of Civil Engineers
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