

12th International Symposium on Environmental Concerns in Rights-of-Way Management

September 23 - 26, 2018, Grand Hyatt, Denver, Colorado, USA

SUNDAY, SEPTEMBER 23

7:00 AM - 8:00 AM	Registration for Field Session Participants
8:00 AM - 5:00 PM	Field Session - Climate Change Management on the Continental Divide (<i>additional fee</i>)
8:00 AM - 5:00 PM	Field Session - Water Pipelines through the Rocky Mountains (<i>additional fee</i>)
4:00 PM - 6:30 PM	Registration
6:00 PM - 8:00 PM	Opening Reception @ Wynkoop Brewing Company

MONDAY, SEPTEMBER 24

8:00 AM - 9:00 AM Registration and Breakfast

9:00 AM - 11:30 AM OPENING KEYNOTE SPEAKER, DALE SANDS
PLENARY PANEL

11:30 AM - 1:00 PM Lunch, Exhibits and Posters

1:00 PM - 3:00 PM Concurrent Paper Presentations, Session 1

Decommissioning/Aging Infrastructure		Wildlife		Technology		Vegetation Management	
1-A	Environmental Issues and Pipeline Abandonment – a Regulatory Perspective <i>Shawna Cox, B.Sc., National Energy Board</i>	1-A	Does the Development of a Transmission Line Right-of-Way in a Fragmented, Boreal Landscape Act as a Barrier to Movements of American Marten? <i>Wayne Tucker, M.E.Des, Stantec Consulting Ltd.</i> <i>Karen Rashleigh, M.Sc., Stantec Consulting Ltd.</i>	1-A	The Role of Field Technology in the Effective Response to Extreme Weather Events: How FP&L excelled in the aftermath of Hurricane Irma <i>Dan Marsh, Florida Power & Light</i> <i>Chris Kelly, Clearion</i>	1-A	Best Management Practices for Long-term Environmental Compliance <i>Lacey England, Columbia Gas of Virginia</i> <i>Stan Vera-Art, MPM, Grow with Trees</i>
1-B	Replacing Aging Infrastructure in the Modern Era: Challenges and Opportunities <i>Steve Barker, Northern Indiana Public Service Company</i>	1-B	Powerline Rights-of-Way Impacts and Mitigation Solutions on White-tailed Deer and Woodland Caribou: Not all things are created equal <i>Alexandre Beauchemin, M.Es, Hydro-Québec</i>	1-B	Geographic Information System Mobile, Web, and Reporting Best Practices for Long Term Re-vegetation Monitoring - Ruby Pipeline Case Study <i>Michael Brown, Jacobs</i> <i>Rachel Newton, Jacobs</i>	1-B	Implementing 63 Years of Right-of-Way Integrated Vegetation Management Research <i>Dave Krause, Asplundh Tree Expert LLC</i>
1-C	The End of the Journey for AltaLink's 61L Transmission Line <i>Brent Saulnier, B.A.Sc., RT(Ag), Altalink</i> <i>Andrea Hachkowski, P.Eng., Jacobs</i>	1-C	Best Management Practices to Protect Wildlife Populations and Improve Habitat within Active and Regularly Maintained Rights-of-Way <i>Chase Bernier, CWB, BSC Group, Inc.</i> <i>Joshua Holden, M.Sc., National Grid</i>	1-C	3D Technology and Analytics Facilitating Integrated Vegetation Management Strategy <i>Stacie Grassano, B.Sc., M.Sc., Intelfuse</i>	1-C	CNUC/PG&E Pipeline Vegetation Management Benchmarking <i>Randall Miller, CNUC</i>
1-D	Review of Pipeline Abandonment Programs and the Search for Evidence of the Potential Environmental Effects of Pipeline Abandonment In Place <i>Dayna Solmie, Jacobs</i>	1-D	Mitigation for Threatened and Endangered Bats and Migratory Birds using Habitat Equivalency Assessment Techniques <i>Katie Baker, Ecology & Environment, Inc.</i> <i>Gordon Ferguson, Northern Indiana Public Service Company</i>	1-D	How Existing and Emerging Remote Sensing Technology Can Facilitate ROW Planning and Management <i>David Campbell, B.Sc., M.Sc., APEM Limited</i>	1-D	Establishing Sagebrush on Pipeline Rights-of-Way <i>John Beaver, MS Range Science, WESTECH Environmental Services, Inc.</i>

3:00 PM - 3:30 PM Break

3:30 PM - 5:00 PM

Concurrent Paper Presentations, Session 2

Monday, 9/24/18

Climate Change		Pollinators		Planning		Vegetation Management	
2-A	Documenting and Preventing Wildlife-Caused Fires in Rights-of-way <i>James Dwyer, Ph.D., EDM International, Inc.</i>	2-A	Plant Biodiversity Dynamics in IVM-converted ROW Areas and Population Dynamics of Pollinators and Other Invertebrates in ROW Areas Managed by VM and IVM Tactics <i>Anand Persad, Ph.D, BCE, Davey Institute</i>	2-A	Creating Route Optionality and Defensibility – A Case Study of the Aurora Pipeline <i>Kevin Seel, Ph.D., Golder Associates Ltd.</i>	2-A	Using Prescriptive Analytics Modelling to Shift towards Preventative Vegetation Management Planning <i>Mike Hutchinson, RPF, Remsoft Inc.</i>
2-B	The Importance of Terrain and Geohazard Analysis for Right-of-Way Planning in Northern Environments <i>Dennis O'Leary, P.Ag., Golder Associates, Ltd.</i>	2-B	Pollinator Opportunities Within Rights-of-Way (POWR): Development and application of a geospatial decision model for driving pollinator conservation <i>Dan Salas, Cardno</i>	2-B	In-field Routing a Path to Success: A Case Study of the Atlantic Sunrise Pipeline Project <i>Greg Netti, Ecology & Environment, Inc.</i>	2-B	Establishing an Empirical Basis for Wire Zone Width <i>John Goodfellow, BioCompliance Consulting, Inc.</i>
2-C	Fluvial Geomorphically-based Approach to Evaluating River Integrity within Rights-Of-Way <i>Stephanie Coffman, Stantec</i>	2-C	Managed ROWs Increase and Enhance Habitat Opportunities and Occurrence of Native Pollinators in Oak Woodlands in the West <i>Kerry Wininger, Sonoma State University</i>	2-C	Siting the Manitoba-Minnesota International Power Line using the EPRI-GTC Siting Methodology <i>Jesse Glasgow, GISP, PMP, Team Spatial Maggie Bratland, M.S., Manitoba Hydro James Matthewson, H.B.Sc.F, Manitoba Hydro</i>	2-C	Vegetation Management Legislation: I'm Just a Bill, an Ordinary Bill <i>Sarah Ball, MPP/MS, Edison Electric Institute</i>

TUESDAY, SEPTEMBER 25							
7:30 AM - 8:30 AM		Registration and Breakfast					
8:30 AM - 9:30 AM		TUESDAY KEYNOTE SPEAKER					
9:30 AM - 10:00 AM		Break					
10:00 AM - 12:00 PM		Concurrent Paper Presentations, Session 3		Tuesday, 9/25/18			
Indigenous Engagement		Wildlife	Regulatory	Vegetation Management			
3-A	Rights-of-Way Management in Saskatchewan's Boreal North: Engaging indigenous communities and Crown corporations in environmental decision making <i>Tegan Brock, BSc, P.G.D., University of Saskatchewan</i>	3-A	Snails and Shrews and Moles, Oh My! Mitigating for Wildlife Species at Risk on Linear Infrastructure Projects under Increasing Regulatory Expectations in Canada <i>Dana Drumm, P. Biol., R.P. Bio., Jacobs</i>	3-A	Efficiently Addressing Environmental Constraints in the Federal Permitting Process: Lessons learned from four recent case studies <i>Anna Lundin, HDR, Inc.</i>	3-A	Ignore the Environment and Eventually It Will Go Away <i>Byron Shelton, Savory Institute Stan Vera-Art, MPM, Grow with Trees</i>
3-B	Tribal Partnerships in Transmission Line Permitting <i>Michael Justin, HDR, Inc. Jim Atkinson, Minnesota Power Michelle Bissonnette, HDR, Inc.</i>	3-B	Mitigation of Effects on Mountain Beaver from a Run-of-River Hydropower Right-of-Way <i>Andy Smith, M.Sc., EDI Environmental Dynamics, Inc.</i>	3-B	Changing Paradigm of Right-of-Way Management in India <i>Avijit Ghosh, MBA, Center for Environment Development</i>	3-B	Phytotechnology : Warning, plants at work! <i>Normand Lesieur, F.Eng., Hydro-Quebec</i>
3-C	ROW Agreements with Tribal Nations and Leading Good Practice <i>Roxana Benoit, Enbridge, Inc.</i>	3-C	Response of Amphibian and Reptile Populations to Vegetation Management and Edge Habitat Enhancement along Utica-Marcellus Pipelines in Ohio <i>Gabriel Karns, Ph.D., The Ohio State University</i>	3-C	Minot Load Serving Project: How Stakeholder Input Affected Rights-of-Way Requirements, Design, and Construction of a 230 kV Transmission Line and Substation in North Dakota <i>Tom Hillstrom, Xcel Energy Sean Lawler, Xcel Energy Jared Brandell-Douglas, Tetra Tech</i>	3-C	Danger > Hazard > Risk: A review of terminology used by electric utilities to characterize the threat from trees <i>Geoffrey Kempter, Asplundh Tree Experts, LLC</i>
3-D	Assessing Cumulative Effects on Traditional Land Use in Canada - Challenges for Linear Projects <i>Demetris Poulakas, B.Sc., M.Sc., Jacobs</i>	3-D	Vegetation Management for the Trans Mountain Pipeline ROW and Strategic Measures to Minimize Disturbance to Oregon Forestsnail <i>Selena Shay, R.P.Bio., A.Ag., B.Sc, Kinder Morgan Canada</i>	3-D	Transco's Dalton Expansion Project - An (un)Mitigated Success <i>Joe Thacker, Jacobs</i>	3-D	Outcomes of Right-of-Way Vegetation Plot Monitoring on the TMX Anchor Loop Project 2010-2017 <i>Kristen Beechey, B.Sc., Jacobs</i>
12:00 PM - 1:00 PM		Lunch, Exhibits and Posters					

1:00 PM - 3:00 PM

Concurrent Paper Presentations, Session 4

Tuesday, 9/25/18

Stakeholder Engagement		Wildlife		Planning		Vegetation Management	
4-A	<p>Human Aspects in the Planning of a Transmission Line</p> <p><i>Kathia Lavoie, Hydro-Quebec</i></p>	4-A	<p>Biosecurity Management in Queensland, Australia</p> <p><i>Stephen Martin, B.Sc., MLRM, Powerlink, Queensland</i></p>	4-A	<p>How Environmental Factors Affected the Design, Use of Helicopter Construction, and Vegetation Management of a Transmission Line Rebuild Project</p> <p><i>Joleen Trussoni, Dairyland Power Cooperative</i></p>	4-A	<p>Future Vegetation Management “Observatories:” Industry/Academic Partnerships and Long-Term Vegetation Management</p> <p><i>Chris Halle, PhD, Sonoma State University Carolyn Mahan, PhD, Pennsylvania State University</i></p>
4-B	<p>Proactive Cultural Resource Surveys as a Right-of-Way Management Tool</p> <p><i>Christopher Watkins, PhD, RPA, North Wind Resource Consulting</i></p>	4-B	<p>Use of Small Unmanned Aircraft Systems to Assess and Quantify Synthetic Baling Twine Entanglement Risk in Osprey Nests</p> <p><i>James Dwyer, PhD, EDM International, Inc.</i></p>	4-B	<p>An Innovative Approach to Emergency Management Planning for the Trans Mountain Pipeline System</p> <p><i>Jamie Kereliuk, Kinder Morgan Canada, Inc. Paul Van Velzen, Jacobs</i></p>	4-B	<p>The Effect of Vegetation Management Approaches on Electric Transmission Rights-of-Way on Bees Pre- and Post-Vegetation Treatment</p> <p><i>Carolyn Mahan, PhD, Pennsylvania State University</i></p>
4-C	<p>Managing and Meeting Stakeholder Expectations in an Unpredictable Climate</p> <p><i>Rachel Newton, M.S., Jacobs Michael Bonar, Kinder Morgan, Inc.</i></p>	4-C	<p>Wildlife Habitat in Utility Corridors: Incorporating Habitat Features Into Vegetation Management</p> <p><i>Jacob Johnston, MS, Habitat Network, Cornell Lab of Ornithology</i></p>	4-C	<p>Low-Volume Roads Management Modes Impact on Water Quality and Aquatic Ecosystems</p> <p><i>Karelle Gilbert, B.Sc. A, Université Laval</i></p>	4-C	<p>Herbicide Impacts on Pollinators: Current State of Knowledge and Best Management Practices</p> <p><i>Marla Westerhold, MS, CA, Commonwealth Edison Aaron Feggestad, PWS, MS, Stantec Consulting Services Inc. Shannon Peters, Commonwealth Edison</i></p>
4-D	<p>Getting Along With Your Neighbors – Understanding the relationship between property rights and sound vegetation management practices</p> <p><i>Blandon Granger, SR/WA, Sacramento Municipal Utility District James Prossick, SR/WA, HDR</i></p>	4-D	<p>Guidance for Initiating a Long-Term Research Study of Insect Pollinators on Electric Transmission Line Rights-of-Way</p> <p><i>Jessica Van Splinter, SUNY Research Foundation</i></p>	4-D	<p>Environmental Assessment: In Search of the Right Level of Detail at the Right Stage of the Game</p> <p><i>Jason Smith, M.Sc, Jacobs Craig Neufeld, B.Sc., P.Biol, Jacobs</i></p>	4-D	<p>Climate Change Adaptation Strategies in Vegetation Management</p> <p><i>Josiane Bonneau, Wildlife Habitat Council</i></p>

3:00 PM - 3:30 PM

Break

3:30 PM - 5:00 PM

Concurrent Paper Presentations, Session 5

Tuesday, 9/25/18

Stakeholders, Climate Change		Pollinators		Planning		Vegetation Management	
5-A	<p>Footprint or Buffer? A Comparison of Regulatory Approaches for Managing Historical Resources for Linear Projects</p> <p><i>Sean Britt, M.A., Stantec Consulting Ltd.</i> <i>Jennifer Russell, P.Ag., Enbridge Pipelines Inc.</i></p>	5-A	<p>Formulation of a Pollinator Site Value Index to Measure the Benefits of ROW Habitat Change for Pollinators following the Transition from Traditional Mowing to IVM</p> <p><i>Richard Johnstone, IVM Partners Inc.</i></p>	5-A	<p>Use of Quantitative Mitigation Analysis to Facilitate Timely and Defensible Compensatory Mitigation</p> <p><i>Timothy Reilly, M.S., Stantec Consulting</i></p>	5-A	<p>Adapting to Challenges for Transmission Land Assets in Australia</p> <p><i>Stephen Martin, B.Sc., MLRM, Powerlink Queensland</i></p>
5-B	<p>Historic Rains, a Powerline in Peril, an Eagle, a Goldmining Town, and Fast Track Regulatory Solutions</p> <p><i>M. Bernadette Bezy, M.Sc., Stantec Consulting Inc.</i> <i>Leah McNearney, California Dept. of Water Resources</i> <i>Ryan Martin, California Dept. of Water Resources</i></p>	5-B	<p>GIS Modeling of Existing and Potential Pollinator Habitat of an Electric Utility's Service Territory in Northern Illinois</p> <p><i>Chris Pekar, GISP, Stantec Consulting</i></p>	5-B	<p>The Quest for Sustainable Pipelines: Practical strategies in mitigation and compensation offsets</p> <p><i>Jody Bremner, P.Biol., R.P.Bio., Jacobs</i></p>	5-B	<p>Integrated Vegetation Management and Environmental Compliance on State, Federal, and Tribal Lands</p> <p><i>Christopher Watkins, PhD, RPA, North Wind Resource Consulting</i> <i>Lisa Young, Arizona Public Service</i></p>
5-C	<p>Incorporating Potential Climate Change Effects on Valued Components in Environmental Assessments - A Review and Case Study</p> <p><i>Andy Smith, MSc., EDI Environmental Dynamics Inc.</i></p>	5-C	<p>Optimal Guidance for Promoting Insect Pollinators on Rights-of-Way, Based on Peer-reviewed Literature</p> <p><i>Jessica Van Splinter, SUNY Research Foundation</i></p>	5-C	<p>Use of High-Resolution Imagery and LiDAR in ROW Planning and Design</p> <p><i>Sarah Allen, Normandeau Associates, Inc.</i></p>	5-C	<p>ROW Vegetation Management Using Web-based and Mobile-based GIS</p> <p><i>Dane Pehrman, Jacobs</i> <i>John Hurd, GISP, Jacobs</i></p>

WEDNESDAY, SEPTEMBER 26, 7:30 AM - 1:00 PM

7:30 AM - 8:30 AM Registration and Breakfast

8:30 AM - 9:30 AM **WEDNESDAY KEYNOTE - Doug Benevento, EPA**

9:30 AM - 10:00 AM Break

10:00 AM - 12:00 PM Concurrent Paper Presentation, Session 6

Technology		Wildlife/Wetlands		Regulatory		Vegetation Management	
6-A	Evaluating Right-of-Way Wildfire Threat in a Changing Environment <i>Robert Burnham, Sierra Nevada Consulting</i>	6-A	Mitigation and Compensation Measures in Powerline Rights-of-way are Successful When Done the Right Way in the Right Place <i>Alexandre Beauchemin, Hydro-Québec</i>	6-A	Managing Regulatory and Permitting Commitments with the Realities of Construction <i>Greg Liberman, Environmental Design & Research</i> <i>Chris DeRoberts, Central Hudson Gas & Electric</i>	6-A	Management of Hedge Bamboo Growing Near Power Lines <i>A. D. Ali, PhD, BCMA, The Davey Tree Expert Company</i>
6-B	A Proactive Approach for ROW Vegetation Management Using GIS and Remotely Sensed Data <i>Deborah Sheeler, MA, GISP, Davey Resource Group</i> <i>William Ayersman, MS, GISP, Davey Resource Group</i>	6-B	Landscape Level Habitat Restoration; Addressing Legacy Right-of-Way Impacts for Species at Risk <i>Paula Bentham, M.Sc., P.Biol., Golder Associates Ltd.</i>	6-B	Evaluation of Impacts on Interior Forests for Pipeline Projects in West Virginia <i>Julia Yuan, Federal Energy Regulatory Commission</i> <i>Robyn Susemihl, Burns & McDonnell</i> <i>Clifford Brown, West Virginia Division of Natural Resources</i>	6-B	Linking Herbicide Dissipation in the Field to Laboratory Toxicity Testing to Improve Soil Ecological Risk Assessment along Transmission Rights-of-Way <i>Katherine Stewart, University of Saskatchewan</i> <i>Amy Jimmo, University of Saskatchewan</i>
6-C	Remote Sensing Technological Solutions to Protect ROWs in a Changing Environment <i>Eric Brown, Sacramento Municipal Utility District</i> <i>Jacob Hall, Quantum Spatial Inc.</i>	6-C	Managing Rights-of-Way Wetland Restoration and Creation to Enhance Climate Resiliency and Carbon Mitigation <i>Gillian Davies, PWS, NHCWS, RSS, CESSWI, BSC Group Inc.</i> <i>Melissa Kaplan, PWS, BSC Group Inc.</i>	6-C	Gray Areas: An Evaluation of Construction Activities Approved to Occur Outside of Approved Work Areas on FERC-regulated Natural Gas Pipeline Projects in the US States <i>Anthony Dalbec, Merjent, Inc.</i>	6-C	Adapting the Principles of Integrated Pest Management to Integrated Vegetation Management <i>John Goodfellow, BioCompliance Consulting Inc.</i>
6-D	Data Management in a Dynamic Construction Environment <i>Craig Neufeld, B.Sc., P.Biol, Jacobs</i> <i>Jennifer Russell, P.Ag., Enbridge Pipelines Inc.</i>	6-D	Mineral Roads in Sphagnum-dominated Peatland: Restoration by the peat inversion technique <i>Kathy Pouliot, M.Sc., Université Laval</i>			6-D	Helicopter Tree Pruning on Transmission Corridors in Western Coniferous Forests <i>Mark Stewart, B.S., B.S., Pacific Gas & Electric Company</i>

12:00 PM - 1:00 PM Closing Luncheon