

Restoring Resilience: Big Impacts across Small Spaces

2016 OIPC Annual General Meeting and Conference
&
Carolinian Canada Ecosystem Recovery Forum

October 25-26, 2016

Toronto Botanical Gardens – 777 Lawrence Ave E, North York,
ON

Agenda and Program





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Agenda

Tuesday October 25, 2016 – Field Tours, Conservation Awards and Evening Social

1:00 – 4:00	Field Tours (field tours run concurrently) Meet and board buses at main entrance of Toronto Botanical Garden
1:00 – 4:00	Ecological Restoration and Invasive Plant Management at the Rouge <i>Experts from the City of Toronto, Toronto and Region Conservation Authority, and the University of Toronto will provide insight on some of the latest developments in their respective invasive species and ecological restoration projects. Three field sites will be visited.</i>
1:00 – 4:00	Highlights of the Rouge Valley Conservation Action Plan – Lower Rouge Marshes <i>The Rouge Valley Signature Site Conservation Action Plan is one of 14 such plans facilitated by Carolinian Canada for biodiversity hotspots across Ontario's deep south. It was developed in collaboration with eight local agencies and groups. This tour will highlight actions planned and currently being implemented in the Lower Rouge Marshes area to enhance biodiversity and ecological health in this provincially significant natural area.</i>
6:00 – 6:30	Carolinian Canada Conservation Awards Ceremony – Toronto Botanical Gardens, Floral Hall <i>Presentations to nine groups and individuals recognized for their diverse and outstanding contributions to the protection and stewardship of Carolinian Canada's unique Nature.</i>
7:00 – 9:00	Evening Social – Toronto Botanical Gardens, Garden Hall

Wednesday October 26, 2016 – Conference, Toronto Botanical Gardens, Floral Hall

8:00 – 9:00	Registration & Breakfast Buffet
9:00 – 9:10	Conference Welcome: Iola Price, President, Ontario Invasive Plant Council Don Pearson, Chair, Carolinian Canada Jarmo Jalava, Director of Ecosystem Recovery, Carolinian Canada
9:10 – 10:00	Keynote Speaker: Doug Tallamy <p>Doug Tallamy is a professor in the Department of Entomology and Wildlife Ecology at the University of Delaware, where he has authored 84 research publications and has taught for 34 years. Chief among his research goals is to better understand the many ways insects interact with plants and how such interactions determine the diversity of animal communities. His book <i>Bringing Nature Home</i> was published by Timber Press in 2007 and was awarded the 2008 Silver Medal by the Garden Writers' Association. <i>The Living Landscape</i>, co-authored with Rick Darke, was published in 2014. Among his awards are the Garden Club of America Margaret Douglas Medal for Conservation and the Tom Dodd, Jr. Award of Excellence.</p> <p>Rebuilding Nature's Relationships at Home Specialized relationships between animals and plants are the norm in nature rather than the exception. It is specialized relationships that provide our birds with insects and berries that disperse our bloodroot seeds, that pollinate our goldenrod, and so on. Plants that evolved in concert with local animals provide for their needs better than plants that evolved elsewhere. Dr. Tallamy will explain why this is so, why specialized food relationships determine the stability and complexity of the local food webs that support animal diversity, why our yards and gardens are essential parts of the ecosystems that sustain us, how we can use our residential landscapes to connect the isolated habitat fragments around us and produce valuable ecosystem services, and what we can do to make our landscapes living ecosystems once again.</p>
<i>Session 1: Taking action to improve biodiversity in urban and modified ecosystems</i> <i>Moderators: Michelle Kanter, Carolinian Canada & Sarah Winterton, World Wildlife Fund - Canada</i>	
10:00 – 10:15	Every Act of Conservation Matters: Motivating Stewardship that Aligns with Conservation Priorities Martha Gruelle, Wildlife Habitat Council <p>With most of the southern Ontario landscape greatly modified by human development, it is difficult to preserve biodiversity relying solely on conservation lands. Management of the developed landscape is dispersed—millions of people and thousands of entities make decisions that can help or hurt biodiversity. Wildlife Habitat Council (WHC) brings conservation to the location where most adults spend most of their waking time: the workplace. WHC's emphasis is on taking action: Initial steps to support native species are seen as crucial, even if the direction needs correction later. Further, as more people care for economically active lands, our urban systems gain social and structural resilience. This presentation will offer lessons learned from working with companies and their employee volunteers for conservation on corporate properties. The volunteers are non-biologists, mainly, who may bring a love of turtles or bluebirds, say, but may not see the “big picture” of</p>

	conservation science. We will offer examples of stewardship programs in urban, modified, and novel ecosystems and that engage people at their current level of understanding—while seeking to deepen that understanding through taking, and then assessing, conservation actions. Ontario Power Generation’s system-wide conservation planning and employee-implemented programs will serve as a key example.
10:15 – 10:30	<p>Corporations and Institutions Grow Back to Nature with Credit Valley Conservation’s Greening Corporate Grounds</p> <p>Deborah Kenley, Credit Valley Conservation</p> <p>Corporate and Institutional lands make up half to a third of most urban areas with conditions ranging from partially naturalized or bordered by natural areas to manicured and industrial. Each presents unique ecological landscaping or restoration opportunities and challenges. With corporate social responsibility programs and policies becoming an expected part of business and religious groups adopting mandates of environmental stewardship, there is a growing need for guidance on how to take action. Greening Corporate Grounds helps corporations and institutions plan for and implement ecological landscaping projects on their grounds, while fostering stewardship and providing opportunities for environmental education. This session will present the lessons learned, the strategies used for designing successful ecological landscaping projects on private lands, and how to create and keep momentum within an organization.</p>
10:30 – 10:45	<p>The Loretto Maryholme Restoration Project: Managing a Historical Property into a Sustainable Forest Ecosystem</p> <p>Mary Mallany, Loretto Sisters</p> <p>The Loretto Maryholme property is at Roches Point, close to where Cook’s Bay enters into Lake Simcoe. The property has a noteworthy history. Its first documented steward was the federal government in the early 1800’s. The land was subsequently sold in the early 1870’s to a Member of Parliament who became Speaker of the House. It served as his family’s summer property. In 1910 or so, the land was purchased from his widow by the Fensom family who held it until 1946 when it was purchased by the Loretto sisters for a vacation home. It has been known locally as the government lands or, just recently, the nun’s lands. The vision for the property is to establish a productive, sustainable forest ecosystem which replicates, to the greatest degree possible, the native forest conditions, contributes to the area’s biodiversity and ecology, expands existing forest cover, and buffers and protects Lake Simcoe’s shoreline. It is believed that these characteristics will be beneficial to the retreatants who come to stay on the property. A managed forest plan was created in 2005 to restore the woodlands and other parts of the property in line with York Region’s Greenland strategy and the Lake Simcoe Environmental strategy. This presentation will be an update on progress of this plan and the restoration of the entire site especially in the control of invasive species and increasing the tree canopy with the assistance of several government agencies and local volunteers.</p>

10:45 – 11:00	<p>Pollinator Paradise Project: Building a Pollinator Corridor across Hamilton</p> <p>Jen Baker, Hamilton Naturalists' Club / Beatrice Ekoko, Environment Hamilton</p> <p>Urban environments have the potential to support large numbers of pollinators. According to the Urban Pollinators Project (Bristol University), half of Germany's entire bee fauna have been found in Berlin, 35% of British hoverfly species were sampled in a single Leicester garden and honeybees produce more honey in urban Birmingham than in the surrounding countryside. People know that there is something they can do to help pollinators. As a result, attitudes towards a little wildness in the built environment have relaxed. In Hamilton, the Pollinators Paradise Project is drawing huge support locally. An initiative of two local non-profit groups (Environment Hamilton and the Hamilton Naturalists' Club), the project aims at building a corridor across the city of Hamilton, so that a native bee or butterfly need never exhaust itself on its search for food, shelter and nesting grounds to reproduce. This presentation will explain the strategy that the project is adopting to reach this goal, community engagement and education as well as policy wise. Individual action becomes collective action, with greater impact. Homeowners and renters, faith groups that have property, adopt-a-park groups in public parks, schools and ward councillors are engaged. The project is in discussions with city planners about how they might influence the city of Hamilton to adapt a pollinator-friendly related policy in the 2018 urban Official Plan review. Mapping the project's "pollinator sites" is ongoing and initiatives that further awareness and participation to improve biodiversity include a recently launched, "Monarch Awards" to demonstrate appreciation for gardening for nature.</p>
11:00 – 11:15	<p>Panel Discussion and Questions from the Audience</p>
11:15 – 11:30	<p>Networking Break and Refreshments</p>

Session 2: Restoration and Invasive Plant Management Approaches and Techniques

Moderator: Michael Irvine, Ontario Invasive Plant Council/Ministry of Natural Resources and Forestry

11:30 – 11:45 Integrating Invasive Species Management in Forest and Landscape Conservation

Danijela Puric-Mladenovic, Ontario Ministry of Natural Resources and Forestry / University of Toronto

Invasive species have been a growing concern in natural resource management and conservation for decades. However, their impacts on natural systems and biodiversity, their economic impacts and costs of controlling their spread have become alarming. Their management needs to be a necessary component of landscape planning and biodiversity conservation. Adaptive management actions either tailored to detect and eradicate invasive species, reduce their negative impacts to native ecosystems, and/or conserve native biodiversity need to be prioritized using sound inventory and monitoring information. Using Vegetation Sampling Protocol (VSP) data on location, frequency and abundance of invasive species and their absences, we can better understand landscapes and natural areas, estimate existing and future risks, and inform, prioritize and evaluate our decisions. VSP data have been used to quantify the impacts of Emerald Ash Borer and the risk of losing species such as American Beech and Hemlock. An overview of the state of natural remnants and invasive plant distribution within and around urban areas will be used as a warning sign for the future. Finally, how inventory and monitoring information can be used to prioritize conservation and management actions to ensure efficient allocation of resources will be discussed.

11:45 – 12:00 Dog-strangling Vine Control in the Carden Alvar Natural Area – From Mind-boggling to Manageable

Kristyn Ferguson, Nature Conservancy of Canada

European Swallowwort (*Cynanchum rossicum*, locally known as Dog-strangling Vine (DSV)) was discovered in the Carden Alvar Natural Area for the first time in 2009, as a small population growing on an open alvar and was treated with herbicide the following year. In 2011, the source of the population was discovered on several private properties south of the alvar, in the form of a 10+ acre monoculture of DSV, with dense coverage on all surrounding lands. The Nature Conservancy of Canada (NCC) and the Couchiching Conservancy (CC) have been working steadily since 2012 to treat DSV on these several hundred acres of private land which are infested to varying degrees. The purpose of this work is to prevent further northerly spread of DSV onto conservation lands containing globally rare alvar habitat. In 2016, we found that after three seasons of treatment, we had reduced the treated populations of DSV to a manageable level. The character of our control efforts has shifted from spraying extensive monocultures to walking, searching, and treating scattered stems of DSV. On one 50-acre property, for example, the amount of herbicide used has been reduced from 125 L in 2013 to 50 L in 2016. A variety of strategies including herbicide application, seedpod removal, and support of the test release of a biological control agent have been employed over the years. NCC and CC are currently re-examining and reprioritizing our work regarding DSV in Carden, made possible by these successes from 2012-2015.

12:00 – 12:15	<p>Evidence-based Strategies to Control invasive <i>Phragmites</i> in Ontario’s Highway Corridors</p> <p>Pat Chow-Fraser and James Marcaccio, Department of Biology, McMaster University</p> <p>The Ontario Ministry of Transportation (MTO) requires evidence-based strategies to control <i>Phragmites</i> in highway ditches within its jurisdiction. We are building a centralized GIS database to screen information from published and unpublished sources within Great Lakes jurisdictions, to determine the most cost-effective treatment program for MTO. The centralized GIS database will include location of projects, approaches and specific protocols used to control <i>Phragmites</i>, site type, treatment, relative costs, timing of application, frequency of treatment etc, and suspected/documented degree of success. To scientifically determine effectiveness of various protocols, we will use results of a parallel project funded by MTO in which high-resolution orthophotos acquired during leaf-off conditions in 2006, 2010 and 2015 have been assembled to quantify temporal changes in distribution of invasive <i>Phragmites</i>. These images will be used to objectively deduce the degree of success for projects implemented between 2003 to 2012 (assuming we must have a 2-year lag time to draw conclusions about long-term effectiveness). For projects too small to ascertain effectiveness through remote sensing image data, we will conduct visual surveys to determine degree of success. We will hold an experts workshop and invite MTO representatives to McMaster for a final round-table discussion of best strategies for controlling growth of <i>Phragmites</i> in highway corridors, given agency budgets and regulatory constraints. This will be the first project in which high-resolution remotely sensed image data will be used to scientifically assess the effectiveness of the most commonly used methods to control invasive <i>Phragmites</i> in highway corridors throughout Ontario.</p>
12:15 – 12:30	<p>Invasive <i>Phragmites</i> Control Efforts in Lake Erie Coastal Wetlands at Rondeau and Long Point</p> <p>Brianne Brothers, Ontario Parks</p> <p><i>Phragmites australis</i> ('<i>Phragmites</i>') is recognized as one of Canada’s worst invasive species. The Ministry of Natural Resources and Forestry (MNRF) received approval of an Emergency Use Registration request, by the Health Canada Pesticide Management Regulatory Agency, to undertake a pilot project using an herbicide to control <i>Phragmites</i> in wet areas. 500 hectares of <i>Phragmites</i>-dominated wetland within Rondeau Provincial Park, Long Point Crown Marsh, and additional private lands in the Long Point area, will be treated in September 2016 under this pilot project. Through this presentation, MNRF staff will provide early results from the undertaking as well as share information related to next steps and monitoring timelines.</p>
12:30 – 12:45	Panel Discussion and Questions from the Audience
12:45 – 1:45	Lunch (provided)
1:45 – 2:15	<p>Display & Networking Session</p> <p>Ontario Invasive Plant Council Annual General Meeting</p>

Session 3: Examining the Big Picture and a Look Ahead

Moderator: John Foster, Ontario Invasive Plant Council

2:15 –
2:30

How can enemy exchange impact the health and diversity of invaded communities?

Jason Verbeek (presenter) and Peter Kotanen, Department of Ecology & Evolutionary Biology, University of Toronto

The invasion success of many plant species has traditionally been linked with enemy release: the expectation that non-indigenous plants gain a fitness advantage by escaping enemies from their native range. However, a simple correlation between invader abundance and potential enemy release may overlook the complex interactions of host switching and enemy exchange. Enemies such as pathogens, parasites, and predators are often readily exchanged between related plant species. With the presence of invaders, the enemy community can change over time and geographic range as novel environments are encountered. Invasion may, therefore, trigger drastic changes in the abundance and diversity of shared enemies. While the effects of a changing enemy community are well-documented for invaders, the extent to which this variation may impact native community composition is poorly understood. I tested variation in the impacts and community composition of enemies in native Ontario plants based on proximity to and abundance of the invasive Canada Thistle. Often invading in extremely high densities, Canada Thistle may have strong impacts on native plants as a herbivore and pathogen reservoir. In addition to providing a more comprehensive understanding of the impacts that invaders can have on related species and entire ecosystems, by addressing this question, we can also better understand how insect and pathogenic biocontrol agents may act on a large scale at the community level.

2:30 –
2:45

Assessing the Potential for Tree Species to Become Invasive

W.D. (Bill) McIlveen, various affiliations

The flora of Ontario includes at least 224 tree species. The list includes native and introduced species and sub-species, species used for agriculture and species used in landscaping. Just over half are not native to the Province. Only a small number of these have been shown to be common in the wild state but the majority of species have not yet been assessed. We can be certain that there is a wide diversity in the invasiveness of different species ranging from low potential risk to proven problems. Factors to consider in assessing the potential of a tree species to become invasive are its prospects for entry Ontario (e.g. is it here already or in nearby jurisdictions?), the attributes of the species (e.g. factors controlling reproduction and spread). Can it live in the wild state? Is it a problem elsewhere? And how long has it been in Ontario (the generation time for trees is long)? The presentation includes an examination of two species that have recently seen a dramatic rise in the rate of use in landscape horticulture. The species reviewed are Callery Pear (*Pyrus calleriana*) and Japanese Tree Lilac (*Syringa reticulata*). Because the Ontario experience with these is so short term, they will be compared with Common Pear (*Pyrus communis*) and Common Lilac (*Syringa vulgaris*) as proxy species which have themselves become widely established in the natural environment.

2:45 –
3:00

The Role of Native Species in Urban Forest Planning and Practice: A Case Study of Carolinian Canada

Andrew D. Almas (presenter) & Tenley M. Conway, Department of Geography, University of Toronto

In recent years, many North American municipalities have adopted urban forest management plans. These plans typically include ambitious tree planting goals, with a focus on increasing native species' presence. Having a high percentage of native species can increase ecological integrity, but there are also benefits associated with planting non-native trees in urban forests. The possibility of using assisted migration as a way for cities to respond to climate change raises additional questions about the importance of managing for native species. We explore the ways native tree species are treated in urban forestry planning and practice in the light of on-going debates around ecological integrity, non-native benefits, and assisted migration through a case study of municipalities in Carolinian Canada. In particular, we (1) examine the role of native species in urban forest management plans, (2) explore municipal foresters' attitudes and actions related to native tree species, and (3) determine if municipalities with and without formal management plans are making different decisions regarding native tree species planting. We found all of the municipalities with management plans emphasize native species, and many justify their planting as a way to increase ecological integrity. These municipalities are also considering more of the managerial aspects associated with native species than municipalities without a plan. However, only a fraction of species native to the region are available through nursery stock, meaning many native species are not planted by municipalities. Most municipalities are also passively practicing assisted migration without considering the ways it can be used as a climate change adaptation tool. The gaps between municipalities and practice are discussed, as well as future research needed to help guide treatment of native species in urban forests.

3:00 –
3:15

Twenty Years of Restoration at Kelso Quarry Park: a Biodiverse Novel Ecosystem

Chelsea McIsaac and Nigel Finney, Conservation Halton

After operational work ceased within Kelso Quarry, restoration work began to create a novel ecosystem upon the escarpment. The transformation of an 180,000m² limestone extraction quarry into a biologically diverse escarpment park was an endeavor that has transpired over the last 20 years. Elements of the restoration efforts began when Conservation Halton worked with the aggregate owners to naturalize the quarry before inheriting the property and incorporating it into one of its Conservation Areas. The partners graded and backfilled the walls of the quarry to reflect a more natural slope. A lake was created by allowing groundwater to fill a previous extraction pit and through further excavation of the pit to create undulation of the lake depth. Some depths of the lake were raised by creating underwater rock benches, some areas were deepened, and one very shallow wetland area was created. After the involvement of the previous aggregate owners ceased, Conservation has continued work on the quarry park to restore and introduce biodiversity. Thousands of trees were planted over the following 20 years to forest the terrestrial areas of the quarry. In 2015, the quarry lake was the target of fish habitat enhancements to develop fish biodiversity. Conservation Halton worked on developing the plant life within wetland and riparian areas to benefit fish rearing as well as focused on developing shallow benches along the lakeshore which were dressed with appropriate small gravels/round stone to allow for fish spawning. With the appropriate fish habitat in place, the quarry lake is to receive the first of many native fish introductions in the summer of 2016. Kelso Quarry Park is a prime example of ongoing actions to improve biodiversity in novel ecosystems.

<p>3:15 – 3:30</p>	<p>Restoring Point Pelee’s Savannah</p> <p>Heidi Brown and Julie Charlton, Parks Canada</p> <p>Point Pelee National Park (PPNP) is one of Canada’s oldest and smallest national parks, attracting about 245,000 visitors per year. The park protects a remaining remnant of Canada’s Carolinian ecozone of the St. Lawrence Lowlands, the most biodiverse natural region in Canada. Today the park is home to more Species At Risk (SAR; 64 species) than any other national park. The park also supports a globally endangered ecosystem that supports 25% of these SAR and 21 provincially rare species. This ecosystem, the Lake Erie Sand Spit Savannah (LESSS) was identified in the last State of the Park Report (2006) as the most at risk in PPNP, having lost over 65% in the last 75 years due to succession. Restoring savannah will ensure that the imminent loss of the globally rare Lake Erie Sand Spit Savannah will be halted. This will be achieved by re-introducing fire and other natural disturbance regimes; mechanical clearing; herbicide application; planting native species; restoring a habitat mosaic within the park; and create opportunities to revitalize and enhance the visitor experience by improving the existing program and providing opportunities for visitors, volunteers and youth to directly participate in restoration and monitoring efforts. Invasive species management will play a key part in restoring savannah sites. To date, Point Pelee’s Savannah restoration team has mechanically cleared 23 hectares of Savannah, performed 8 prescribed fires in Savannah ecosystems and planted over 70,000 native grasses and wildflowers back into these areas to increase biodiversity.</p>
<p>3:30 – 3:45</p>	<p>Novel Ecosystems, Resilience and Restoration</p> <p>Heather Cray (presenter), Michael McTavish, Patricia Huynh, Tomm Mandryk, Jonas Hamberg and Stephen Murphy, University of Waterloo</p> <p>Changes in land and water use have increased to a state where the old principles and rules governing restoration ecology may not apply. There is a need to look at the big picture and examine how one can analyze these large scale changes. We have a change in the 'regimes' of space and time on a pace and scale never really witnessed on this planet. This means that restoration to some historical norm - often the subconscious or implied default of academics and practitioners alike - is becoming increasingly unlikely and hybrid and novel ecosystems dominate. On a grand scale, this means we need to consider what regime changes mean for the very theory and application of restoration ecology - a change to the regime of restoration ecology itself. Our research group’s work can assist this decision makers coping with novel ecosystems and the haziness of trying to measure resilience. We will examine how such measures may translate into practical solutions to assist restoration ecology as this mass scale and rapid transition in regimes is occurring. The objective is to examine the changes to our conceptual and theoretical framework (how we think in restoration ecology), the analytical innovation needed, and how this can be translated into workable governance, policy, and on-the-ground action.</p>
<p>3:45 – 4:00</p>	<p>Panel Discussion and Questions from the Audience</p>
<p>4:00 – 4:10</p>	<p>Closing Remarks</p>

Speaker Biographies

Session 1. Taking action to improve biodiversity in urban and modified ecosystems

Every Act of Conservation Matters: Motivating Stewardship that Aligns with Conservation Priorities



**Martha Gruelle, Senior Manager, Conservation Planning
Wildlife Habitat Council, Detroit, MI**

As Senior Manager, Conservation Planning, Martha is the primary resource-person within WHC for several important member companies. She also directs the Huron to Erie Waterways for Wildlife Project in southeast Michigan and southwest Ontario, supporting communications among about 45 WHC-certified corporate conservation programs for information sharing and inspiration. Martha is based in Detroit, Michigan, at the offices of DTE Energy. She previously directed a neighborhood environment and development organization in Detroit, and earned a mid-career Master's degree in ecosystem management from the University of Michigan School of Natural Resources and Environment; those studies focused on

natural habitats within urban settings. Besides her work for WHC, Martha volunteers as a team leader for a local watershed group on sampling for in-stream invertebrates, and for an urban natural area where she leads control of invasive plants.



**Jeff Wright, Environmental Advisor - Biodiversity
Environmental Services - Natural Sciences, Ontario Power Generation**

Jeff Wright is the Owner/Director of Balance SRM Inc. and is a Registered Professional Biologist and interdisciplinary Project manager. Jeff is presently an Environmental Advisor for Ontario Power Generation coordinating OPG's Biodiversity Programs. Jeff advocates big-picture thinking and drives for sustainable, risk based solutions that balance ecological, cultural, economic and

political factors. During his 25+ year career he has fostered enduring, trust-based relationships with many project proponents, regulators, stakeholders and aboriginal communities. Outside his career Jeff spends most of his time with his wife Jen and two daughters Emma and Sara. He is a 20 year veteran of the Fire Service. Living near Georgian Bay he enjoys all water based outdoor pursuits.

Corporations and Institutions Grow Back to Nature with CVC's Greening Corporate Grounds



Deborah Kenley, M.L.Arch. Program Coordinator, Credit Valley Conservation

Deborah Kenley, M.L.Arch engages corporations and institutions in ecological landscaping projects on their properties through Credit Valley Conservation's Greening Corporate Grounds program. An experienced ecological landscape designer, Deborah works with participants to identify opportunities to create and install native habitat that maximizes aesthetic appeal and ecological benefits, while engaging and educating staff and volunteers.

The Loretto Maryholme Restoration Project: Managing a Historical Property into a Sustainable Forest Ecosystems



Mary Mallany, Loretto Sisters

Sr. Mary Mallany is a member of the Loretto Sisters, the property owners of Loretto Maryholme since 1946. For the last 15 years, Mary has been the environmental animator for the Spirituality Centre, the main work of the property. A teacher in her earlier life, Mary looks for ways to invite guests and visitors to this historical site to learn about the ecosystems present. A self-taught environmentalist with a lifelong passion for plants and gardens, Mary has used her time at Loretto Maryholme to discover and create a partnership that integrates the land and the programs of Loretto Maryholme Spirituality Centre.

Pollinator Paradise Project: Building a Pollinator Corridor across Hamilton



Jen Baker, Land Trust Manager, Hamilton Naturalist Club

Jen Baker is project coordinator for the Hamilton Pollinator Paradise Project.



Beatrice Ekoko, Project Manager, Environment Hamilton

Beatrice Ekoko is communications coordinator for the Hamilton Pollinator Paradise Project. Beatrice also works on various files at Environment Hamilton, including Growing the Greenbelt, as Project Manager. Beatrice is a Hamilton-based writer.

Session 2. Restoration and Invasive Plant Management Approaches and Techniques

Integrating Invasive Species Management in Forest and Landscape Conservation



Dr. Danijela Puric-Mladenovic, Ontario Ministry of Natural Resources and Forestry, Science and Research Branch, Natural Heritage Information Centre /Assistant Professor (status), Faculty of Forestry, University of Toronto

Danijela Puric-Mladenovic has a B.Sc. and M.Sc. in Landscape & Urban Forestry (University of Belgrade, Serbia) as well as a Ph.D. from the Faculty of Forestry, University of Toronto. She works for OMNRF, Science and Research Branch, Natural Heritage Information Center. Her applied science and research work is concerned with developing innovative methods and tools that enable conservation, management, spatial planning, rehabilitation and restoration of Ontario's settled and urbanized landscapes. She holds a status of Assistant professor at the Faculty of Forestry, University of Toronto where she has been involved with a wide range of forest research activities and graduate student projects. Danijela has over 22 years of experience working in Ontario settled landscapes and collaborating with a wide range of partners that include different levels of governments, academic institutions, NGOs and community groups.

Dog-strangling Vine Control in the Carden Alvar Natural Area – From Mind-boggling to Manageable



Kristyn Ferguson, Program Director - Georgian Bay-Huron, The Nature Conservancy of Canada

Kristyn Ferguson is the Program Director for Georgian Bay – Huronia at the Nature Conservancy of Canada’s Ontario Region, based out of the Guelph office. Kristyn has a B.Sc in Environmental Biology from the University of Guelph and an MES in Restoration Ecology from the University of Waterloo. Kristyn has been working with NCC for 9 years in a variety of roles, including land securement, property management and stewardship, fundraising, and conservation planning. Her passions at work include engaging donors and volunteers with NCC’s work, negotiating land deals, and attempting to tackle stewardship projects that have been deemed “too difficult” or “hopeless” (at the cost of losing much sleep!). In her free time Kristyn enjoys camping and kayaking with her husband, walking their rescue dog Bailey, writing poetry, and competing in (very small) triathlons.

Evidence-based Strategies to Control invasive Phragmites in Ontario’s Highway Corridors



Pat Chow-Fraser, Professor of Biology, McMaster University

Pat Chow-Fraser is Professor of Biology at McMaster University, Hamilton, Ontario, and teaches courses in applied ecology, environmental sustainability, and management of aquatic ecosystems. The Chow-Fraser lab uses remote sensing and GIS techniques, radio telemetry, and trophic-level manipulations to predict the effect of water level, impact of invasive species, and human disturbance on the quality and quantity of marsh habitat in Great Lakes. Past studies have supported the restoration and management of wetlands in several Areas of Concern in Canada, including Cootes Paradise Marsh (Hamilton) and Frenchman’s Bay in Lake Ontario (Pickering), the Dunnville Marsh and wetlands of Point Pelee in Lake Erie. Dr. Chow-Fraser led the development of several ecological indicators that use periphyton, zooplankton, aquatic macrophytes, turtles and fish as well as environmental parameters such as road density, basin morphology, water quality and land uses to assess the ecological status of streams and coastal wetlands. Students work in an interdisciplinary environment using landscape-level approaches to assess how natural and anthropogenic disturbances affect the movement and habitat use by at-risk freshwater turtles and important sportfish including pike and muskellunge. Most recently, her students have used various high-resolution imagery including those acquired by unmanned aerial vehicles (drones) to track the distribution of invasive Phragmites in wetlands and along major roadways of Ontario.



James Marcaccio, PhD Candidate, Department of Biology, McMaster University

James Marcaccio is a Ph.D. Candidate in the Biology Department at McMaster University. Under the supervision of Dr. Patricia Chow-Fraser, his thesis applies new approaches to map wetland vegetation and assess habitat quality in the Great lakes basin. Using field identification, remote sensing with unmanned aerial vehicles (UAVs) and geographic information systems (GIS), James' research has often focussed on determining the spatial extent of invasive Phragmites and more recently how to best manage this aggressive plant.

Invasive Phragmites Control Efforts in Lake Erie Coastal Wetlands at Rondeau and Long Point



Brianne Brothers, A/Zone Ecologist, Ontario Parks - Southwest Zone

Brianne Brothers is a graduate of Wilfrid Laurier University and Cambrian College, and is currently filling in for the role of Zone Ecologist within Ontario Parks' Southwest Zone. Prior to this position, Brianne was involved with several biology and environmental technician related positions within the MNRF and Ontario Parks. Brianne has a love for the outdoors and wildlife, and spends her free time camping, hiking and canoeing across Ontario.

Session 3. Examining the Big Picture and a Look Ahead

How can enemy exchange impact the health and diversity of invaded communities?



Jason Verbeek, MSc candidate, Department of Ecology and Evolutionary Biology, University of Toronto

I am an evolutionary ecologist currently studying as an MSc candidate in the Kotanen Lab at the University of Toronto. Generally, my research is focused on species dynamics in novel environments, such as at range boundaries or in invaded ecosystems. Often, the questions I pursue are based on my deep interest in addressing the impacts of human activity on the natural environment. My current research focuses on how enemy exchange between natives and invaders impacts the native community, and how the range invaded by an exotic species may be affected by enemy exchange. I previously studied how offspring size varies across environments, specifically, the evolution of offspring size in the context of ecological range limits. At a broad scale, I hope to contribute to conservation efforts and inform effective policy decisions.

Assessing the Potential for Tree Species to Become Invasive



W.D. (Bill) McIlveen, various affiliations

W.D. (Bill) McIlveen received his B.Sc. (Agr.) and M.Sc. from the University of Guelph and a Ph.D. in Plant Pathology from the Pennsylvania State University. He was the Senior Terrestrial Toxicologist with the Ontario Ministry of the Environment for over 25 years and then as an environmental consultant where he conducted biological inventories (flora and fauna) throughout Ontario. He is a member of many environmental organizations and has served as an advisor to environmental committees in Halton and Peel. He has authored or co-authored over 390 articles or reports relating to environmental matters ranging from naturalist club newsletters to government reports to refereed journals. He served as the Regional Coordinator (Halton/Peel) for the Ontario Tree Atlas. He is a member of 18 naturalist organizations and has served on the executive of the Field Botanists of Ontario, the Ontario Bird Banding Association, the Ontario Vernal Pools Association, and the Toronto Entomological Association. He sat for 9 years on the Ecological and Environment Advisory Committee and on the Lake Ontario Shoreline Algae Action Committee for the Regional Municipality of Halton. He was the Chairman of the Steering Committee for the Natural Areas Inventory completed in Halton and served in an advisory capacity with the Natural Areas Inventory initiated in the Region of Peel. He is currently working on a new and comprehensive Flora of Halton.

The Role of Native Species in Urban Forest Planning and Practice: A Case Study of Carolinian Canada



Andrew Almas, Department of Geography, University of Toronto, Mississauga

Like most people, Andrew's love of trees stems from multiple sources, but none more seminal than growing up next to the Royal Botanical Gardens in Hamilton. Walking through the Carolinian Forest with the odd tree labeled so that passersby could identify the species, afforded him the opportunity to memorize the variety of species present, appreciating the diversity. Andrew parlayed this knowledge into an urban forestry position at the Town of Oakville. Currently, he is defending his PhD dissertation at the University of Toronto, exploring the role of native species and other urban forest issues on municipal planning and residents' attitudes, actions, and knowledge. He also works for Stantec Consulting Ltd., conducting environmental site assessments across Ontario.

Twenty years of Restoration at Kelso Quarry Park: a Biodiverse Novel Ecosystem



Chelsea McIsaac, Watershed Restoration Technician, Conservation Halton

Chelsea has been working in the restoration field in the Golden Horseshoe for four years and the environmental monitoring field in Ontario and Alberta for an additional six years. Her passion lies in restoring southern Ontario environments in innovative and ecologically sound ways to allow a healthy balance between ecological processes and human interaction.



Nigel Finney, Watershed Restoration Planner, Conservation Halton

Nigel Finney is a Watershed Restoration Planner with Conservation Halton where he has been working for over 8 years. He brings considerable expertise to the position related to species at risk, parks master planning, and ecosystem restoration. In this position, Nigel is responsible for the implementing public land restoration projects and preparation watershed studies and plans. Previously, Nigel has also previously worked for the Canadian Wildlife Service, Nature Conservancy of Canada, Parks Canada and Environment Canada.

Restoring Point Pelee's Savannah



Heidi Brown, Resource Management Officer, Parks Canada

Heidi Brown is a Resource Management Officer at Point Pelee National Park. She has been part of the Savannah Restoration program at Point Pelee for 4 years and has witnessed many changes, successes and lessons learned!



Julie Charlton, Lake Erie Sand Spit Savannah (LESSS) Project Coordinator, Parks Canada

Julie Charlton is a Project Coordinator at Point Pelee National Park. She is new to the Savannah Restoration program at Point Pelee and comes from an environmental engineering background. Her appreciation of this globally rare ecosystem grows each day!

Novel Ecosystems, Resilience and Restoration



Heather Cray, PhD candidate, Conservation and Restoration Ecology (CaRE) Research Group, University of Waterloo

Heather Cray is a PhD candidate and Vanier Scholar at the University of Waterloo, Ontario. Heather's research is in the field of restoration ecology, with a focus on the tallgrass prairie ecosystem and its many interconnected parts. Her work investigates methods of ecosystem restoration, soil organism interactions, and pollinator community assembly. Heather is a part of the Conservation and Restoration Ecology (CaRE) Research Group in the Faculty of Environment, and works in partnership with Ontario Parks, Conservation Halton, MNRF, AMEC, and the MTO.

