

# 2021 Ontario Invasive Plant Conference and Annual General Meeting

## Agenda

**Date** Tuesday, January 12, 2021

**Time** 9:00am – 5:00pm

**Location** *Virtual*

## Schedule

Time	Speaker	Presentation Title
9:00	System Opens	
9:05-9:15	<b>Brittany Finigan, Communications</b> Ontario Invasive Plant Council  <b>Belinda Junkin, Executive Director</b> Ontario Invasive Plant Council	Introduction to our conference software Remo (How-To)
9:15-9:30	<b>John Urquhart, President</b> Ontario Invasive Plant Council  <b>Gail Wallin, Chair</b> Canadian Council on Invasive Species	Welcome
9:30-10:15	<b>Dr. Bethany Bradley</b> Northeast Research in Invasive Species and Climate Change Management	Keynote Speaker
10:15-11:15	<b>John Urquhart, President</b> Ontario Invasive Plant Council  <b>Belinda Junkin, Executive Director</b> Ontario Invasive Plant Council  <b>Vicki Simkovic, Coordinator</b> Ontario Invasive Plant Council  <b>Lauren Bell</b> Invasive Species Centre	Ontario Invasive Plant Council Program Updates  Best Management Practices Updates  Early Detection and Rapid Response Network (EDRR) Update
11:15-11:30	Networking break	
11:30-12:10	<b>John Urquhart, President</b> Ontario Invasive Plant Council  <b>Belinda Junkin, Executive Director</b>	Ontario Invasive Plant Council Annual General Meeting

	Ontario Invasive Plant Council	
12:10-12:20	<b>Kellie Sherman</b> Canadian Council on Invasive Species	Canadian Council on Invasive Species (CCIS): Enabling Canadians to take action on invasive species
<b>12:20-12:50</b>	<b>Lunch break/Networking</b>	
12:50-1:10	<b>Jennifer Smith, MES</b> Toronto and Region Conservation Authority	An Ecosystem Approach to Invasive Species Management in the Meadoway: Creating a Linear Connection to Communities and Ravines across a 16km Stretch in Scarborough, Toronto
1:10-1:30	<b>Allison Winmill, MSCF, RPF</b> Lallemand Plant Care	A Novel Control of Buckthorn on the Landscape
<b>1:30-1:40</b>	<b>Networking Break</b>	
1:40-2:00	<b>Corey Burt, MSc. Candidate</b> Wilfred Laurier University  <b>Jessica Consiglio, M. BEMA Candidate</b> Trent University  <b>Erin LeClair</b> Canadian Food Inspection Agency	Invasive Japanese Stilt-grass ( <i>Microstegium vimineum</i> ) – First records in Canada and Preliminary Management
2:00-2:20	<b>Madison Postma, MFC Candidate</b> University of Toronto  <b>Dr. Danijela Puric-Mladenovic</b> University of Toronto  <b>Katherine Baird, MSc</b> Toronto Botanical Garden	Assessing the Introduction and Age of the <i>Acer platanoides</i> (Norway Maple) invasion within Wilket Creek ravine in Toronto, Ontario
2:20-2:40	<b>Brooke Harrison</b> Georgian Bay Forever	5-year Community-Based Phragmites Eradication Plan
2:40-3:00	<b>Brittany Hernon</b> Western New York Partnership for Regional Invasive Species Management	Great Lakes Slender False Brome Working Group- A Collaborative Effort to Research and Manage an Invasive Grass.
3:00-3:20	<b>Tyler Harrow-Lyle</b> Ontario Technical University  <b>Dr. Andrea Kirkwood</b> Ontario Technical University	Investigating the distribution of <i>Nitellopsis obtusa</i> (Starry Stonewort) in Ontario lakes and its role as an ecosystem engineer
<b>3:20-3:35</b>	<b>Networking Break</b>	
3:35-3:55	<b>Krishna Selvakumar</b> University of Toronto  <b>Dr. Danijela Puric Mladenovic</b> University of Toronto	Invasive Species Encroach as Shaped by Changes in Land Use Over Time within UTSC's Forested Property
3:55-4:15	<b>John Kemp</b> Giant Hogweed Mitigation Project	Volunteers Reduce Giant Hogweed Populations Along the Grand River

4:15-4:35	<b>Karen McDonald</b> Toronto and Region Conservation Authority  <b>Namrata Shrestha</b> Toronto and Region Conservation Authority	TRCA's Invasive Species Management Strategy and Prioritization Framework
4:35-4:50	<b>Belinda Junkin</b> , Executive Director Ontario Invasive Plant Council  <b>Maddy Warlow</b> , Project Coordinator Ontario Invasive Plant Council	Provincial Phragmites Strategy Project – Overview and Questionnaire
4:50- 5:00	<b>John Urquhart</b> , President Ontario Invasive Plant Council  <b>Belinda Junkin</b> , Executive Director Ontario Invasive Plant Council	Closing Remarks & networking
5:00	<b>Online Meeting Ends</b>	

## Keynote: Dr. Bethany Bradley

Northeast Regional Invasive Species and Climate Change (RISCC)

Invasive species and climate change are two of the most prominent forms of anthropogenic global change identified by the Millennium Ecosystem Assessment. Invasive species have pronounced negative impacts on ecosystems and economies, and these impacts may be exacerbated by climate change. But, for most invasive species and invaded ecosystems, the outcomes of this interaction remain unknown. This presentation will review the current state of knowledge about how climate change influences invasive species.

The presentation covers the following topics: Effects of rising temperature, potential range shifts, novel disturbance regimes, and plant response to rising CO<sub>2</sub>. 1. Rising temperature could benefit invasive species directly by increasing growth rates relative to native species, and by expanding the growing season to create more opportunities in time for invasive species to establish and thrive. 2. Warming and altered precipitation are already causing the ranges of species to shift, including invasive species. But, many invasives are already widely introduced and will have a head start relative to native. 3. Climate change is likely to lead to a 'peakier' precipitation cycle, increasing both drought and flood events. Invasive species tend to thrive under these conditions with higher disturbance. 4. Finally, although rising CO<sub>2</sub> provides a resource for all plants, invasive plants consistently outperform native plants with elevated CO<sub>2</sub> and are more resistant to herbicides. Collectively, these findings suggest that we should be on the lookout for invasive species expanding into new landscapes, emerging earlier in the growing season, and becoming even more competitive.



## Canadian Council on Invasive Species: Enabling Canadians to take action on invasive species

Kellie Sherman; Canadian Council on Invasive Species

Healthy ecosystems provide the foundation for Canada's natural diversity and promote the health and well-being of residents and visitors. Invasive species can threaten ecosystems, as they often displace native species and disrupt natural ecological processes. There are numerous pathways of introduction and vectors of spread for invasive plants and one of these pathways is recreation. To reduce the spread of invasive species from the recreation pathway, the CCIS has conducted extensive research into the behaviours of Canadians when it comes to preventing the spread of invasive species, including through the recreation pathway. This research has provided us with critical information on barriers preventing Canadians from taking action on preventing the spread of invasive species. Therefore, we have tailored our campaigns that focus on the recreation pathway, including Clean Drain Dry and Buy Local, Burn Local to focus on easy steps Canadians can take while enjoying that activity to prevent the spread of invasive species. This presentation will review in further detail, the Clean Drain Dry and Buy Local, Burn Local campaigns and their resources, including youth specific resources, in Canada and how we are spreading the message and delivery of the campaigns through partners. Learn about how to join forces with like-minded organizations and how you can become a partner in these campaigns.

The Canadian Council on Invasive Species (CCIS) serves as a national voice and hub to protect Canada from the impacts of invasive species. With members and chapters from all corners of Canada, along with governments and businesses, the CCIS brings people together to build practical solutions to prevent the spread of invasive species.

## An Ecosystem Approach to Invasive Species Management in the Meadoway: Creating a Linear Connection to Communities and Ravines across a 16km Stretch in Scarborough, Toronto

Jennifer Smith MES; Toronto and Region Conservation Authority

The Meadoway is a unique revitalization project that will convert a 16km section of the Gattineau Hydro Electric Corridor to a high-quality meadow ecosystem with native wildflowers, grasses, and berry-producing shrubs. This project will be completed by 2024 in partnership with the Weston Family Foundation, City of Toronto, Hydro One Network Incorporated, and Infrastructure Ontario.

Invasive species management is an important component of meadow ecosystem restoration, presenting challenges during site preparation and ongoing adaptive management as the meadow matures. Best management practices for invasive species management have been used with success on targeted species, as half the corridor has already been restored with native wildflowers, grasses and shrub species.

Chemical treatments are often considered the best method for controlling certain invasive species. In an effort to reduce the use of chemical herbicides, innovative and experimental strategies for invasive species management are underway including mechanical and organic herbicide treatments. Successes with additional tillage cycles for site preparation replacing glyphosate treatment is evident at reducing invasive presence. Other results from experimental organic methods are still developing and will be covered in the proposed presentation.

The Meadoway, an innovative city-building initiative is large in scale and impactful to local ecosystems, communities and stakeholders. Project partners aim to engage the community and schools in stewardship opportunities in the Meadoway such as invasive species education, and events to dig/pull target species. Connecting the community to the project will secure its ongoing success.

## A Novel Control of Buckthorn on the Landscape

Allison Winmill, MSCF, RPF; Lallemand Plant Care

Nearly everyone has a story about buckthorn. This invasive shrub outcompetes native species in the understory of Canadian forests and can be extremely difficult to control. The disappearance of over-story ash trees due to the Emerald Ash Borer has exacerbated this issue further, allowing buckthorn to upset natural regeneration. Natural land managers, non-profit organizations, and municipalities alike who are dealing with buckthorn may be limited in management options due to restrictions/ limitations of products currently available. BioForest/Lallemand Plant Care has been exploring a biologically-based solution to control buckthorn using a native, naturally-occurring fungus; LALCIDE® CHONDRO. Multiple research trials in the field have demonstrated that application to cut stumps or girdled stems was highly effective in controlling established invasive buckthorn in the forest understory. This biological herbicide helps control invasive buckthorn, making it an ideal tool to support the health of both our urban and rural woodlands.

## Invasive Japanese Stilt-grass (*Microstegium vimineum*) – First records in Canada and Preliminary Management

Corey Burt, MSc. Candidate; Wilfred Laurier University  
Jessica Consiglio, M. BEMA Candidate; Trent University  
Erin LeClair; Canadian Food Inspection Agency

*Microstegium vimineum* (Japanese Stiltgrass) is an annual grass which is considered an invasive species in North America. It has the potential to pose a significant threat to economic and ecological resources and is regulated as a pest in Canada under the Plant Protection Act. *M. vimineum* is shade tolerant and is capable of invading a variety of natural and anthropogenic habitats. Two field botanists (C.W. Burt and J.A. Consiglio) discovered this species for the first time in Canada during the summer of 2019. We will discuss the extent of colonization and the habitats that have been invaded for both the first record of *M. vimineum* in Canada from Short Hills Provincial Park (Niagara Region) and subsequent second population discovered at Tanager Tract (Elgin County). We will review *M. vimineum*'s general biology, invasive potential, dispersal methods, and diagnoses from other similar grasses found in Ontario. We will also discuss the actions taken to date to properly document the species, survey extant populations, survey for new populations, and to control and manage its spread.

## Assessing the Introduction and Age of the *Acer platanoides* (Norway Maple) invasion within Wilket Creek ravine in Toronto, Ontario

Madison Postma, MFC Candidate and Dr. Danijela Puric Mladenovic; University of Toronto  
Katherine Baird, Ecologist; Toronto Botanical Garden

After over a century of disturbances, the property that encompasses the Toronto Botanical Garden and the Wilket Creek ravine in Toronto, Ontario, has fallen victim to the invasive Norway maple (*Acer platanoides*). This study's objectives were to improve the overall knowledge of Norway maple invasions within the Wilket Creek ravine, determine when and where Norway maples were introduced in the study area, and improve the general understanding of Norway maple age dynamics within the property. The results show that Norway maple was introduced into the Wilket Creek ravine in the 1940s, while 50% of the trees were established between the 1980s and 2000s (18 to 40 years old). The results also show that Norway maple regeneration is present in almost all wooded areas within the Wilket Creek ravine. Implementing an intensive Norway maple management plan that combines mechanical and chemical control methods, invasive species bylaws with public education and outreach programs can help restore the natural area's integrity and manage the spread of this invasive species.

## Georgian Bay Forever: 5-year Community-Based *Phragmites* Eradication Plan

Brooke Harrison, Georgian Bay Forever

Georgian Bay Forever has been working towards eradicating invasive *Phragmites* along the Eastern shorelines of Georgian Bay for the past 8 years. In 2019 we developed a 5-year eradication plan to have 505 of the 579 mapped sites eradicated, nearly 90%, by the year 2025. Figure 1 and table 1 highlight the success we have had, seeing many sites in the small (under 10m<sup>2</sup>) category or in the monitoring/eradicated category. Each of the 579 sites have individual eradication plans to be controlled by either GBF summer students, home owners, cottage associations, or other volunteers, under the management of GBF through a manual cut process that takes 2-5 years of annual cuts. This is completed by using, raspberry cane cutters, Stihl cutters, and/or truxors for massive, dense sites. *Phragmites* grows in a variety of different environments so it is crucial that each stand is approached with an individual management plan. Although 2020 was challenging as we were unable to host community cuts, we had 87 volunteers dedicate nearly 500 hours and 4 staff who dedicated 1600 hours and cut approximately 110 stands. The presentation will highlight the importance of yearly mapping, determining a management plan, establishing who will control each stand using what tools, demonstration of techniques, and proper disposal. It will highlight successes and challenges we have faced, and how any small group or organization with a community and municipal support can control *Phragmites* at a community level.

## Great Lakes Slender False Brome Working Group- A Collaborative Effort to Research and Manage an Invasive Grass.

Brittany Hernon; Western New York Partnership for Regional Invasive Species Management

The Great Lakes Slender False Brome Working Group (GLSFBWG) brings together partners from 20 organizations in the Great Lakes Basin to focus on the management of slender false brome (*Brachypodium sylvaticum*), a highly invasive, early detection priority species that forms dense monocultures and threatens native biodiversity. This invasive grass is relatively new to the Great Lakes Basin, found in New York and Ontario, and is an important species to be on the lookout for as it spreads rapidly and negatively impacts a wide range of habitats. Western New York Partnership for Regional Invasive Species Management (WNY PRISM) is leading a collaborative, initially funded through the Great Lakes Restoration Initiative, to improve the understanding and management of this species. This program will discuss outcomes of the GLSFBWG including partner/network coordination, survey and spread prevention efforts, and education and outreach. This talk will also provide results from a 3-year study that assessed the effectiveness of manual, mechanical, chemical and a combination of mechanical and chemical control on slender false brome in western New York. We will discuss the results of this research and detail the best management practices for the control of this species. The presentation will stress lessons learned, show the progress of management efforts over the course of the study, and demonstrate the importance of partnerships formed during this project. This presentation provides an opportunity to learn about a new invasive species and measures that can be implemented if slender false brome is found in your area.

## Investigating the distribution of *Nitellopsis obtusa* (Starry Stonewort) in Ontario lakes and its role as an ecosystem engineer

Tyler Harrow-Lyle and Dr. Andrea Kirkwood; Ontario Technical University

*Nitellopsis obtusa*, a Eurasian charophyte, was introduced into the Laurentian Great Lakes in the 1970s. Increased reports of *N. obtusa* establishment in inland lakes around the region have occurred over the last decade. To determine the extent *N. obtusa* has been introduced in Ontario lakes, we conducted a 60-lake survey across a geological transition zone. Calcium is an important macronutrient for *N. obtusa*, as it is for all charophytes, thus it was anticipated that *N. obtusa* would respond strongly to calcium availability across the geological transition zone. *N. obtusa* was recorded at 37 sites in 19 of the 60 lakes surveyed. Simultaneously, an investigation into effects *N. obtusa* has on ecosystem function was conducted on a recently invaded lake (Lake Scugog) in Ontario, Canada, from May-September over four years (2016-2019). *N. obtusa* presence caused lower benthic oxygen concentrations, while having a positive connection with sediment pore-water soluble reactive phosphorus. Species richness decreased across the lower aquatic foodweb (phytoplankton, macro-invertebrate, and macrophyte communities) in response to *N. obtusa* abundance. Interestingly, a co-occurrence model demonstrated that *N. obtusa* had negative relationships with other taxa including *Myriophyllum spicatum*, with notable positive associations with *Microcystis sp.* and the invasive bivalve *Dreissena polymorpha*. *N. obtusa* seems to be acting as an ecosystem engineer by altering sediment chemistry dynamics, decreasing species richness, and facilitating the increase of other problematic taxa which raises concerns for other systems afflicted by this invasive charophyte in Canada.

## Invasive Species Encroach as Shaped by Changes in Land Use Over Time within UTSC's Forested Property

Krishna Selvakumar and Dr. Danijela Puric Mladenovic; University of Toronto

Invasive species' inherent capacity to outcompete native plants and change plant community composition; their distribution and abundance across urban woodlots is a growing biodiversity, economic and social concern. While the existing invasive species management efforts continue to focus on controlling invasive species, it is also essential to understand how fragmentation and the legacy of land-use change impact their distribution. Understanding land-use and natural cover changes across the landscape, where they promote invasive species spread, provides conservation and land use planning evidence for developing specific precautionary limits to development projects surrounding woodlots.

Our study area includes three urban woodland compartments within the University of Toronto Scarborough Campus. The study focuses on spatial changes and field observations. Spatial changes in the woodland extent and their surrounding area are assessed for the period from 1947 to 2011. The existing distribution and abundance of invasive plants, assessed based on field data obtained from VSP monitoring plots, were interpreted alongside the relevant historical information and land-use change context of the UTSC property. We analyze and discuss the five most common invasive species sampled: common buckthorn (*Rhamnus cathartics*), dog strangling vine (*Cynanchum rossicum*), garlic mustard (*Alliaria petiolata*), Norway maple (*Acer platanoides*) and Tartarian honeysuckle (*Lonicera tatarica*). We show that invasive species monitoring, and management practices would benefit from understanding an area's historical context. Moreover, linking invasive species distribution with land-use change provides insight into the legacy effect of land-use on forest susceptibility to invasive species pressures.

## Volunteers Reduce Giant Hogweed Populations Along the Grand River

John Kemp; Giant Hogweed Mitigation Project

Community groups within the watershed were activated by a common desire to retain the recreational use of the riparian areas of the Grand River. Using COVID-19 protocol for this year's activities a live plant demonstration was made to provide education for plant identification and safety. Searches continued in the Central Grand River area and stretched northward past Waterloo in 2020.

Results of volunteer's searches were confirmed and plotted on a watershed map. Findings of this spring and prior years efforts resulted in a contracted control activity of an island population. A new infestation zone was identified in the Kitchener area.

Plant population quantity and location have now been documented for the entire main course of the Grand River. Populations continue to increase exponentially despite these efforts. Government assistance has been solicited in the fight to no avail – yet. Activities in 2020 were partially hampered by the pandemic, but good progress was made in establishing additional stakeholder relationships.

A significant quantity of plants and seed has been removed from the invasion profile.

Additional volunteer and government assistance is solicited to aid in this fight of this invasion.

## TRCA's Invasive Species Management Strategy and Prioritization Framework

Karen McDonald and Namrata Shrestha; Toronto and Region Conservation Authority

Invasive Alien Species (IAS) have various direct and indirect environmental and socio-economic impacts including habitat degradation and biodiversity loss. Managing IAS is a critical component for ecosystem management to ensure healthy ecosystems and communities. However, IAS management can be complex, especially in highly altered urban and near-urban areas such as within the watersheds of Toronto and Region Conservation Authority (TRCA). Here, IAS is often widespread and persistent, management resources are limited, and IAS may be valued for providing existing ecosystem services. A strategic management approach is needed to guide and prioritize decisions and actions in such cases. In 2020 TRCA released TRCA's Invasive Species Management Strategy (ISMS) that provides systematic and strategic directions for IAS management within its jurisdiction (3,467km<sup>2</sup>). The ISMS is founded on the principle of protecting, and where possible, enhancing ecosystem function and services on TRCA-owned and other public lands. It focuses on four main objectives and provides specific actions and success criteria related to prevention, control, protection, and partnerships. Additionally, to complement the ISMS, TRCA's field data, other geo-spatial data, information from literature, and input from stakeholders was used to develop a species-based and an area-based framework for prioritizing IAS management. The presentation will highlight the key aspects of TRCA's ISMS, prioritization framework, and the results of the prioritization analysis to inform broader application of similar approaches in IAS management in other urban and near-urban areas.



# Thank you to our sponsors.



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