2025 Ontario Phragmites Working Group Meeting

Agenda

Date Thursday, January 23rd, 2025

Time 9:00am-5:00pm EST

Location *Virtually hosted on ZOOM*

Registration required at:
https://events.zoom.us/ev/ApEZAUrxqnYGyAyHQEVwmPmOF_Wcv7ZSqLXBHqVd2YbzZSBLulau~AsRPkCaIhaQ1bB52y8cifnKUgdNUvppldGX0xIV7SSIE4Ad5VnexqnjXA

Schedule (last updated January 17, 2025)

Time	Speaker	Presentation Title
9:00 am	**Online Meeting Opens**	
9:10 am	Janice Gilbert and Gabby Nichols, Co-chairs, Ontario Phragmites Working Group Vicki Simkovic, Ontario Invasive Plant Council Emily Mitchell, Ontario Invasive Plant Council	Welcome and Housekeeping
9:30 am	Mary Lou Smoke, Celebrated Indigenous Elder and Knowledge Holder	Indigenous Welcome
Best Management Practices		
9:50 am	Gabby Nichols, Canadian Council on Invasive Species	Overview of the Invasive Phragmites Best Management Practices
Panel: Volunteer and Grassroots Management Efforts		
10:20 am	Nancy Vidler and Bill McDonald, Lampton Shores Phragmites Community Group Sandra Marshall, Ipperwash Phrag Phighters Leslie Wood, Oliphant Fishing Islands Phragmites Group Marilee Koenderink and Karin Mertins, Lake Bernard Phragmites Community Group	
11:20 am	**Lunch Break**	
Management Efforts in Urban Centres		
12:00 pm	Clara Greig, City of Toronto Chris Cormack, Toronto Region Conservation Authority	Managing Phragmites in Large Urban Centres
Panel: Indigenous Leadership on Invasive Phragmites		
12:20 pm	Dannalynn Williams, First Nations Phragmites Control Lynn Short, Humber College Travis Bartnick, Great Lakes Indian Fish & Wildlife Commission Curtis Avery, Nipissing First Nation	
Control Information Updates		

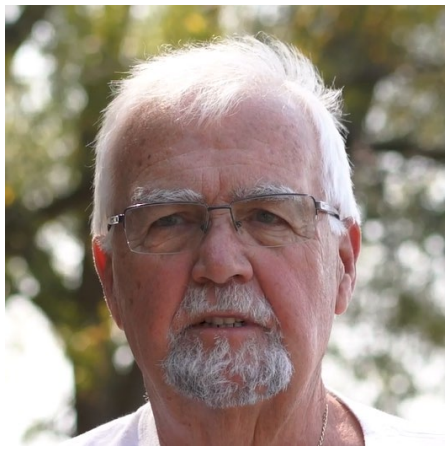
1:20 pm	Tom Cowan, Ministry of Conservation and Parks	Legislative and Practical Considerations of Using Aquatic Herbicides
1:35 pm	Janice Gilbert, Invasive Phragmites Control Centre	Considerations for Use of Spray Drones to Control Invasive Phragmites in Sensitive Habitats
1:50 pm	Jenni Kaija Bershatsky and Jon Wild, Ontario Parks	10 years of Lost Boots and Ladders: Phragmites in Ontario Parks Southwest
2:05 pm	**Networking Break**	
Research		
2:20 pm	Erin Allen and Jack Giroux, Georgian Bay Forever	Deep Learning for Multispectral Image Classification: Identifying Invasive Phragmites in Georgian Bay Wetlands
2:35 pm	Michael McTavish and Ian Jones, University of Toronto	Refining Egg Release Methods for Biological Control agents for Introduced Phragmites
2:50 pm	Claire Schon, University of Waterloo	Phragmites Biocontrol Efficacy Over Three Years and Implications for Plant Community Recovery
3:05 pm	Andrii Kramarenko and Dr. Rebecca Rooney, University of Waterloo	Assessment Tools for Evaluating Recovery of Wetland Forage Value for Waterfowl Following Invasive Species Suppression
3:20 pm	Jersey Allyson Fontz, University of Waterloo	Evaluating Restoration Success: A Best-case Scenario Study from Phragmites australis Dominance to Native Community Recovery
3:35 pm	Grace Lew-Kowal, University of Waterloo	StoryMap Overview: Long Point Peninsula Invasive Species Management Outcomes
3:40 pm	**Break**	
Ontario Phragmites Action Update		
3:45 pm	Speaker details TBC	Ontario Phragmites Action (OPA) program Update
Ontario Phragmites Working Group Update		
4:45 pm	Janice Gilbert and Gabby Nichols, Co-Chairs, Ontario Phragmites Working Group	Discussion and Closing Remarks
5:00 pm	**Online Meeting Closes**	

Speakers

Panel: Volunteer and Grassroots Management Efforts

Nancy Vidler, Chair, Lampton Shores Phragmites Community Group

Nancy retired in 2000 and relocated from Halton Hills to Port Franks after many years of cottaging. She became involved with the Lake Huron Centre for Coastal Conservation and it was through this involvement that she became aware of invasive Phragmites australis. Realizing that Phragmites was well established on the Port Franks beach and in the Ausable watershed, she began educating the community and established partnerships to “Stop the Spread”. From a project in Port Franks this evolved into a municipal wide initiative and Lambton Shores became the first municipality to have council adopt a Management Plan.



Bill MacDonald, Vice Chair, Lambton Shores Phragmites Community Group

Bill, a retired business executive, became interested in Phragmites in 2008 when he was president of Windsor Park Association, a homeowner group in Port Franks, and had begun to see the proliferation of a tall, bamboo-like reed growing in many of the natural areas of Port Franks and elsewhere in Lambton Shores. His research found that no one was then taking responsibility for managing this rapidly expanding alien species. He pressed for a more proactive role to be taken by the municipality and others, and this led to the formation of the Lambton Shores Phragmites Community Group with other like-minded citizens.

Sandra Marshall, Ipperwash Phrag Phighters

Sandra Marshall is a retired elementary school teacher. In 2016, after a small group in our community met with Nancy Vidler from the Lambton Shores Phragmites Community Group, they formed the Ipperwash Phrag Phighters. Since then, she has been both the Secretary and President. At that time, she also joined the LSPCG as a Director.

Leslie Wood, Oliphant Fishing Islands Phragmites Group

Leslie's great grandfather bought several properties on 2 of the Oliphant Fishing Islands located along the east shore of Lake Huron in the early 1900's. She spent summers at our cottage there every year since she was born and because of this she has a deep attachment to the area and particularly the environment. When she retired from a career as a veterinarian, she turned her attention to the serious damage Phragmites was causing to the coastal wetlands around the islands. In early 2017, she gathered landowners on several nearby islands, and founded the Oliphant Fishing Islands Phragmites Community Group. Following OIPC Best Management Practices, they began control efforts that summer and as they gathered expertise, support and collaborators the project has expanded and evolved each year as this presentation will show showing methods, results and plans for the future.

Marilee Koenderink and Karin Mertins, Volunteer Chairs, Phragmites Working Group Lake Bernard

Marilee and Karin are volunteer chairs of the Phragmites Working Group Lake Bernard committee. In 2017, they found out what the aquatic plant was that was taking over our shore. In 2018, they started to organize key people and many volunteers to form the Phragmites Working Group Lake Bernard. In 2019, they consulted with IPPC and Dr. Janice Gilbert for a control plan and presentation to key stakeholders. They reached out to other Phrag Fighters in the province. The managed the total number of sites: 8 sites in 2018, 9 more 2019, 11 more 2020, 12 more 2021, 8 more 2022, 51in total managed in 2023, 64 in 2024. This group consists of over 100 volunteers in a Neighbour Helping Neighbour model. Committee is a collaborative: Three municipalities, the Lake Association and local Eco centre.

Management Efforts in Urban Centres

Clara Greig, Clara Greig, Natural Resource Specialist, City of Toronto

Clara has a Master of Science Degree from Wilfrid Laurier University and a Certificate in Ecosystem Restoration from Niagara College. Clara has over a decade of experience in forestry, environmental research using remote sensing and GIS and ecosystem restoration. Clara joined the Natural Resource Management unit with the City of Toronto in 2021 and is now the Natural Resource Specialist for High Park and several other Environmentally Significant Areas (ESA).

Chris Cormack, Project Manager, Toronto and Region Conservation Authority

Chris Cormack has an Masters of Science Degree from Bangor University in Wales, UK. He is an ecologist with a diverse professional experience including ecological restoration of coastal and terrestrial habitats all around the globe. Chris has over 20 years of professional experience with the last 7 at Toronto and Region Conservation Authority where he is currently a Project Manager overseeing Invasive species management and Meadow Restoration Projects throughout the TRCA Jurisdiction.

Integrated Pest Management Plan for a Complex Urban Wetland: Grenadier Pond Phragmites Removal Project

Phragmites has rapidly spread throughout Toronto, causing significant ecosystem degradation to Toronto's natural heritage system including Grenadier Pond, a site treasured by the surrounding community and holding significance to Indigenous Peoples. The City of Toronto and Toronto and Region Conservation Authority (TRCA) partnered to develop an Integrated Pest Management (IPM) plan to target the 2.7 ha of phragmites established in this pond that is designated as Provincially Significant Wetland (PSW), Area of Natural and Scientific Interest (ANSI) and an Environmentally Significant Area (ESA). The plan was highly collaborative, focused on community engagement and utilized a variety of mechanical and chemical techniques. Our over-arching goal of the project is to reduce the extent of the Phragmites population of Grenadier Pond, to allow shoreline and wetland restoration with native plant communities to improve the overall health of the pond, including improved habitat for turtles and wildlife. After completing our first year of the project, we present on the different elements and processes included in our IPM plan, our next steps and lessons learned.

Panel: Indigenous Leadership on Invasive Phragmites

Danalynn Williams, First Nations Phragmites Control

Danalynn Williams is of Ojibway and Lenape descent. She has had the privilege of working with several First Nation environmental departments, and she carries a deep love and respect for our Mother Earth. Over the years, she has had the honour of living on a number of different territories, each offering a unique way of life. She began her journey on the Territory of Walpole Island, then moved to Oneida, and eventually to the Chippewas of the Thames, where her father transferred their family. When she turned 18, she returned to Aamjiwnaang, fulfilling her grandmother's wish. Throughout her career, she has also had the opportunity to work in six Northern territories, two of which were fly-in communities. It was a challenging experience, especially coming from Southern Ontario, where modern amenities were always easily accessible. In recent years, she have come to truly appreciate the gift of being First Nations.

Lynn Short, Humber College

Lynn is a wife, mother of 3 and grandmother of 5. She is of mixed heritage; Irish, English, Ojibwe, Scottish and German. She has just retired from Humber Polytechnic where she was the Environmental Stewardship Specialist controlling invasive plant species in the Humber Arboretum. Lynn has been working with Invasive Phragmites for over 20 years and has developed a manual control strategy for this plant using simple tools.

Travis Bartnick, Great Lakes Indian Fish & Wildlife Commission (GLIFWC)

Travis Bartnick is a wildlife biologist with the Great Lakes Indian Fish & Wildlife Commission (GLIFWC). He received his Bachelor of Science degree in biology and wildlife ecology from the University of Wisconsin - Stevens Point and a Master of Science degree in wildlife ecology from the University of Wisconsin - Madison. Most of Travis's work with GLIFWC has focused on deer and elk management issues and he oversees GLIFWC's invasive species program. Travis has been involved with non-native phragmites work in the far western Lake Superior region since 2017.

Control Information Updates

Janice Gilbert, Invasive Phragmites Control Centre and Co-Chair, Ontario Phragmites Working Group

Jenni is the zone ecologist for Ontario Parks southwest zone. She has been involved in a variety of large and small scale phragmites management projects within Ontario Parks.

Considerations for Use of Spray Drones to Control Invasive Phragmites in Sensitive Habitats

This presentation will provide information and considerations learned during a three-year research project investigating spray drone application of Habitat Aqua to control invasive Phragmites in sensitive habitats.

Tom Cowan, Ministry of Conservation and Parks

Tom is a Regional Pesticides Specialist with the Ontario Ministry of the Environment and has been involved in pest management and pesticide regulation for 25 years. Tom holds an honors Batchers of Science degree in plant science from Trent University and a masters degree in pest management from Simon Fraser University. Prior to joining the Ministry of the Environment, Tom worked in the greenhouse and nursery industries as a pest management and plant health specialist developing integrated pest management plans for greenhouse, field, and container crops.

Legislative and Practical Considerations of Using Aquatic Herbicides

Jenni Kaija Bershatsky, Zone Ecologist, Ontario Parks

Jenni is the zone ecologist for Ontario Parks southwest zone. She has been involved in a variety of large and small scale phragmites management projects within Ontario Parks.

Jonathan Wild, Ontario Parks, Rondeau

Jon has worked for Ontario Parks out of Rondeau Provincial Park. For the last 20 years, he has also helped coordinate the southwest zone prescribed burn program.

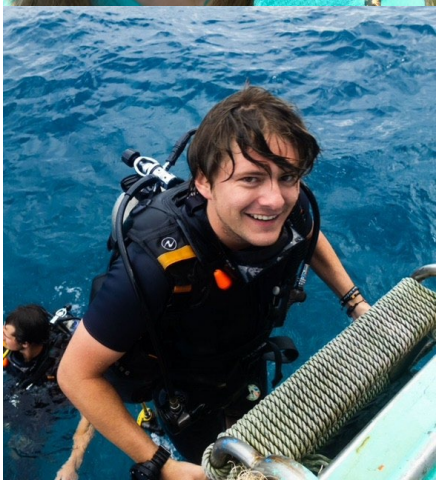
10 years of Lost Boots and Ladders: Phragmites in Ontario Parks Southwest

A look back at a decade of phragmites management in Ontario Parks southwest zone. Discussing successes and lessons learned throughout the years, in all aspects of management.

Research Updates

Erin Allen, Conservation and Restoration Team Lead, Georgian Bay Forever

Erin completed her BSc in Environmental Science at Carleton University and has been the Conservation and Restoration Team Lead at Georgian Bay Forever since last spring. After graduating, she endeavoured to protect species at risk and restore habitat, first through her work contributing to endangered reptile and bat research with Carleton's Davy Lab and now by controlling invasive Phragmites at GBF.



Jack Giroux is a GIS Technician at Georgian Bay Forever

He first joined GBF in 2017 as an undergraduate student working on Phragmites mapping and removal. This experience gave him a first-hand look at the devastating effects of Phragmites spread and how it was impacting his local community. After three amazing summers with GBF, he moved to the west coast of Canada to pursue a Master's Degree in Geomatics for Environmental Management from UBC with the goal of bringing his newly acquired skills home to contribute to Great Lakes conservation. With this goal finally coming true, he is ecstatic to continue his work with GBF, bringing drone mapping and machine learning technology to the forefront in the battle against Invasive Phragmites.

Deep Learning for Multispectral Image Classification: Identifying Invasive Phragmites in Georgian Bay Wetlands

Georgian Bay Forever has been committed to the protection and restoration of Georgian Bay's aquatic ecosystems for many years. Invasive Phragmites (Phragmites australis subsp. australis) pose a significant threat to wetland ecosystems, and accurate detection is critical for effective management. To date, Georgian Bay Forever and its community have over 1,000 sites of invasive Phragmites under management. As new research arises, technology advances, and invasive Phragmites continues to threaten aquatic ecosystems, Georgian Bay Forever recognizes the need for innovation within invasive species management. Remote sensing provides an efficient and cost-effective approach for classifying complex wetland environments. With a remotely piloted aircraft system (RPAS), Georgian Bay Forever has begun collecting multispectral imagery of wetland ecosystems invaded with invasive Phragmites. This study explores the use of Esri's out-of-the-box Deep Learning software to detect Phragmites across various landscape conditions. Utilizing high-resolution (7cm) Red, Green, Blue, Red Edge, and Near Infrared bands, we delineated over 3000 training samples from 18 sites across Matchedash Bay. We explored the phenological, morphological, and temporal conditions influencing Phragmites detection. The resulting model obtained a Phragmites identification accuracy of 93%, with an overall accuracy of 90% including other land cover classes. Fall (August - October) provided significant spectral contrast between the two dominant landcover classes (Phragmites and Typha spp.), improving model performance. This comprehensive workflow and image capture guide can help researchers detect new and established Phragmites growth, plan for and measure the success of management strategies, and offer key insights into the structural dynamics of Phragmites spread.

Dr. Michael McTavish, Research Associate, University of Toronto

Dr. Michael J. McTavish is a research associate with the Smith Forest Health Lab at the University of Toronto. He has a research background in the fields of ecological restoration, invasion science, and the biological control of weeds. His current research focuses on the biological control of weeds (introduced Phragmites, garlic mustard) and the ecology of non-native earthworms.

Dr. Ian Jones, Research Associate, University of Toronto

Dr. Ian Jones Completed a BSc in Biology at the University of Birmingham (UK), an MSc in Entomology at Imperial College London (UK), and a PhD focusing on insect-plant interactions at Florida International University. Since graduating, Ian has held two post-doctoral positions, first at the USDAs Invasive Plant Research Laboratory in Fort Lauderdale, Florida, and more recently at the University of Toronto, focusing on the implementation of weed classical biological control programs. Ian has worked on several of the most damaging weeds in Ontario, including dog-strangling vine, Japanese knotweed, and Phragmites.

Refining Egg Release Methods for Biological Control Agents for Introduced Phragmites

Biological control of introduced Phragmites began in Ontario in 2019 to support conventional management of one of North America's worst weeds. Since that time, approximately 30,000 stem-boring moths (*Archanara neurica*, *Lenisa geminipuncta*) have been released across 50 sites in the province. Releasing eggs of the biological control agents has proven to be a key strategy in the program, as eggs require the least amount of laboratory rearing and handling. This presentation will provide an overview of two research areas supporting the continued development of egg release methods: (1) an experiment to test the viability of manipulating egg hatch timing in the spring through cold storage; and (2) a pilot study to assess the efficacy of directly transferring field harvested stems (with eggs) from existing "nurse sites" to new release locations. Preliminary results suggest that the hatch timing of eggs of both A. *neurica* and L. *geminipuncta* can be delayed up to at least 8 weeks with cold storage without major impacts on hatch rate. Hatch rates were also higher for eggs stored under sheltered outdoor conditions than for those stored indoors. The stem transfer pilot study suggested that moving stems and eggs directly from nurse sites to new locations is a viable release strategy. This new method could be used to reduce the program's reliance on lab reared agents and increase release capacity. Results of these studies will help refine best practice protocols and further scale up the biological control program for introduced Phragmites.

Claire Schon, PhD. Candidate, University of Waterloo

Claire is a PhD Candidate in the Waterloo Wetland Laboratory, led by Dr. Rebecca Rooney at the University of Waterloo in the Department of Biology. Her research focuses on botany, wetland ecology, and invasive species control, working to control invasive Phragmites within southern Ontario.

Phragmites Biocontrol Efficacy Over Three Years and Implications for Plant Community Recovery

Insect-based biological control (biocontrol) is an emerging management option for the highly invasive wetland grass, *Phragmites australis* (hereafter Phragmites). Since 2019, two species of stem-boring moths have been approved for use in Canada as Phragmites biocontrol agents. These biocontrol agents are highly selective for the invasive sub-species of Phragmites and feed on, and in turn damage, the stem vasculature of Phragmites. While the impacts of the stem-feeding by the biocontrol agent species is well-documented in Europe, where both Phragmites and the agent species originate, the efficacy of the biocontrol agents in supressing Phragmites in North America remains unknown. In 2022, we released one of the species of biocontrol agents, *Lenisa geminipuncta*, within two Phragmites patches in southern Ontario. We also established 21 permanent monitoring plots to study the resulting changes to Phragmites health and abundance. Since the original release at both field sites, we have observed the persistence of the moth populations over two field generations. Between 2022 and 2024, the abundance of biocontrol agents increased steadily, with a 420% increase in the density of stems attacked by the biocontrol agents. Over three years, we observed an 89% reduction in Phragmites flowering density. Between 2023 and 2024, we observed a 21% decrease in the canopy height of Phragmites. Following reductions in the canopy height, we also observed a 4% decrease in canopy light interception over three years, indicating a small, but significant, increase in light reaching the soil surface and becoming available to native plants. However, we observed no reduction in Phragmites stem density. Here, we demonstrate that moth-based biocontrol is a promising addition to conventional methods of Phragmites control with the ability to damage a proportion of stems, reduce the sexual reproductive output, and diminish the canopy height and light interception of Phragmites. Our future work will address the potential for native plant community recovery to occur with the observed increases in light penetration and reduction of canopy height that Phragmites biocontrol allows for.

Andrii Kramarenko, Graduate Student, University of Waterloo

Andrii earned my bachelor's and first master's degrees in Environmental Studies from the National University of Kyiv-Mohyla Academy in Ukraine, where he worked in the field of bioremediation. Russia's invasion interrupted his studies, and he served in the Ukrainian army for eight months. After my service, he chose to pursue a second master's in Biology at the University of Waterloo, Canada. Currently, he is a graduate student and a member of the Waterloo Wetland Laboratory, working under the supervision of Dr. Rebecca Rooney. His research focuses on the dynamics of changes in wetland forage value for key waterfowl species following the removal of

invasive *Phragmites australis* from Ramsar-designated wetlands and internationally recognized birding sites at Long Point and Big Creek National Wildlife Areas on the northern shore of Lake Erie. Invasive Phragmites australis poses a significant threat to waterfowl habitats by displacing native plant species and altering the availability of high-quality forage, as its increasing dominance in the ecosystem impacts the composition of waterfowl diets. His work aims to assess these changes to inform wetland restoration and conservation strategies.

Assessment Tools for Evaluating Recovery of Wetland Forage Value for Waterfowl Following Invasive Species Suppression

The forage value of wetland vegetation for waterfowl is critical for their survival and reproduction. Tools like the Vegetation Forage Quality Index (vFQI) and True Metabolizable Energy (TME) index are used to estimate forage quality from plant community data. However, these tools have limitations, including the lack of forage quality coefficients for many common wetland plant species and the complexity of their application in assessing ecosystem changes. These challenges are particularly relevant when evaluating the recovery of forage value in wetlands after herbicide suppression of invasive species such as Phragmites australis, which often homogenizes habitats and reduces their value for waterfowl. We used the vFQI and a modified version of the Weighted Mean Coefficient of Conservatism (WMCCs), to evaluate changes in forage quality across Phragmites-invaded, treated, and reference sites in Long Point and Big Creek National Wildlife Areas. Vegetation data were collected using the point-intercept method across 48 transects in 2022 and 2023. To address the limitation of missing forage quality coefficients, we conducted a survey involving 22 experts recommended by government and non-governmental organizations in Canada and the US with a focus on waterfowl conservation. This effort established forage quality coefficients for 74 wetland plant species in the Great Lakes region, improving vFQI applicability. A two-factor ANOVA was conducted to assess the effects of vegetation type and year on forage quality. The results of the vFQI did not support the hypothesis of recovering forage quality over time. A two-factor ANOVA showed no significant effects of year ($p = 0.3367$), vegetation type ($p = 0.3968$), or their interaction ($p = 0.4789$) likely due to sensitivity to biodiversity gradients. In contrast, the results of the modified WMCCs revealed significant effects of year ($p > 0.0001$), vegetation type ($p < 0.0001$), and their interaction ($p = 0.0024$). Treated sites showed clear recovery, with modified WMCCs scores approaching those of reference sites within two years of invasive P. australis suppression. We recommend that vegetation managers incorporate the modified WMCCs in restoration projects to provide information on the consequences of management actions for waterfowl and to support evidence-based conservation practices.

Jersey Allyson Fontz, PhD. Candidate, University of Waterloo

Jersey Allyson Fontz is a PhD Candidate in the Waterloo Wetland Lab, spearheaded by Dr. Rebecca Rooney at the University of Waterloo. My project involves using trait-based ecology to promote the active revegetation of Lake Erie coastal wetlands after the herbicide-based suppression of invasive Phragmites australis in these areas. She is hoping to help the native seed bank by creating and adding seeding prescriptions onto them to bolster their natural biotic resistance against P. *australis* and other non-native species.

Evaluating Restoration Success: A best-case Scenario Study from Phragmites australis Dominance to Native Community Recovery

The growth and spread of *Phragmites australis* is highly detrimental to Canadian flora and fauna such that the Ontario government has put aside 11 million dollars towards P. australis-management projects for the next few years. Previously, as part of a pilot project, stands of P. australis in Long Point and Rondeau Provincial Park coastal wetlands were first treated with a glyphosate-based herbicide, then some of the standing dead was rolled or mowed. As part of a long-term monitoring program, we tracked the changes in the vegetation community post-herbicide suppression. Plant community reassembly in treated areas depended on the existing seed bank and local propagule influx. We monitored 40 treated plots, 40 untreated plots, and 40 reference plots by performing a modified Braun-Blanquet percent cover analysis with 1 m2 quadrats. We then calculated diversity indices (species richness, Pielou's evenness, Simpson's inverse diversity, and Shannon-Weiner diversity) and floristic quality indices (mean coefficient of conservatism and vegetative forage quality index) for each plot throughout the years. We hoped that the results of this work would help us understand plant community dynamics post-herbicide suppression, evaluate whether the goal of restoring a healthy native plant community has been successfully achieved, and contribute to the argument for the necessity of long-term monitoring. Immediately following herbicide suppression, treated areas were mostly invaded by other non-native and invasive species such as *Hydrocharis morsus-ranae*. Three to five years post-herbicide suppression, most treated areas transitioned to an abundance of native plant species. Furthermore, these native-dominated areas were also comparable to reference sites where P. australis had never invaded. Our study area, however, presents the best-case scenario where treated areas are surrounded with native marsh and contain ample native seed bank. Disturbed wetlands such as those in urban areas or in agricultural lands, where the seed bank may be impoverished or the wetland may be geographically isolated from healthy wetlands that could provide native plant propagules, may present a different outcome without interference such as active restoration or active revegetation via seeding with native species.

Grace Lew-Kowal, University of Waterloo, Research Assistant

Grace is a former master's student in the Waterloo Wetland Lab at the University of Waterloo. Her previous research focused on the use of remotely piloted aircraft systems as a precision herbicide application method for Phragmites australis. She has continued working in the Waterloo Wetland Lab as a research assistant focusing on the creation of a StoryMap to highlight the positive management outcomes of herbicide treatments completed in Long Point, Ontario to suppress Phragmites.

StoryMap Overview: Long Point Peninsula Invasive Species Management Outcomes

This StoryMap showcases the positive ecological outcomes of a comprehensive herbicide treatment and management initiative targeting invasive Phragmites australis in the wetlands of Long Point, Ontario. From 2016 to 2024, this collaborative project united private land owners, researchers, and conservation organizations among others, to address one of Canada's most challenging wetland invaders. Through aerial and ground herbicide applications, strategic removal efforts, and continuous monitoring, over 1000 hectares of Phragmites have been managed, allowing native biodiversity to flourish. Monitoring included assessments of species-at-risk populations and vegetation dynamics to evaluate the efficacy of restoration actions. The outcomes highlight the importance of sustained efforts and collaboration in restoring wetland ecosystems, with promise for conservation practices across North America.

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