

National Phragmites Conference

AGENDA*

January 20, 2022, 11:00am – 5:00pm EST

- 11:00 am** **Welcome and Housekeeping**
- 11:15 am** **Indigenous Welcome and Blessing**
Cliff Summers, First Nation at Oneida Nation
- 11:30 am** **Keynote #1: A collaborative approach to managing invasive *Phragmites* in the Great Lakes region**
Erika Jensen, Great Lakes Commission
- 12:15 pm** **Keynote #2: Large-scale Management of Invasive *Phragmites* in the Long Point Region of Ontario – Risks, Rewards and Lessons Learned**
Heather Braun, ECCC - Canadian Wildlife Service
- 1:00 pm** **NETWORKING BREAK**
- 1:30 pm** **Keynote #3: Biotic communities respond positively to *Phragmites australis* control**
Courtney Robichaud, Postdoctoral Fellow with Carleton University
- 2:15 pm** **An Overview of the Ontario *Phragmites* Working Group**
Janice Gilbert, Co-Chair of the Ontario Phragmites Working Group

2:30 pm **CONCURRENT SESSIONS**
Attendees can choose to move between rooms/topics to catch the presentations of their choice.

	Room Topic 1: New and working in management approaches	Room Topic 2: New in planning, collaboration, and research
2:30 pm	Phragmites on the Horizon: Responding to the impending invasion of <i>Phragmites australis</i> in New Brunswick <i>Kristin Elton, New Brunswick Invasive Species Council</i>	New tools for <i>Phragmites</i> management: Update on biological control in southern Ontario <i>Michael McTavish, University of Toronto, Mitacs Elevate Postdoctoral Research Fellow with Ducks Unlimited Canada</i>
3:00 pm	British Columbia <i>Phragmites</i> Early Detection Rapid Response <i>Becky Brown, B.C. Ministry of Forests, Lands, Natural Resource Operations and Rural Development</i>	Indigenous perspectives on invasive species <i>Gary Pritchard, 4 Directions of Conservation and Curve Lake First Nation</i>
3:30 pm	Cut-to-drown management: taking advantage of high Great Lakes water levels to control <i>Phragmites</i> <i>Wesley Bickford, U.S. Geological Survey - Great Lakes Science Centre</i>	Native and introduced <i>Phragmites australis</i> in British Columbia <i>Geraldine A. Allen, University of Victoria</i>
4:00 pm	Best Practices for the use of the new product Habitat® Aqua Herbicide <i>Brad Hayhoe, BASF Canada Inc</i>	Developing new <i>Phragmites</i> treatments based on genetic and microbial biotechnology <i>Dr. Kurt Kowalski, U.S. Geological Survey - Great Lakes Science Centre</i>

- 4:30 pm** **Discussion and Wrap-Up**
- 5:00 pm** **NETWORKING TO FOLLOW OFFICIAL EVENT END**

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SPEAKERS ABSTRACTS AND BIOS

CLIFFORD T. SUMMERS

(Owe Taninkeya Mani – *His Tracks Appear As He Walks*)

Cliff Summers is a member of the Oneida Nation of the Thames, which is a Haudenosaunee community west of London, Ontario. Oneida like all Iroquois communities is a Matrilineal Society – Cliff is Wolf Clan following his mother.

He is a Paralegal Candidate, having studied the program at triOS Career College in London, Ontario. Cliff is a single father and has 4 biological children and 7 grandchildren and many extended (Ti O'Spaye) family members.

Although he spent much of his career working with Indigenous accused persons and worked with federal and provincial offenders in the Kingston and Toronto area jails since the late 70's. Cliff maintains that "long term solutions to our people's conflicts with the criminal justice system (CJS) lie in efforts to prevent our people from going to prison & becoming in conflict with the law in the first place".

Cliff is President and founder of a new non-profit organization (2018), the *Indigenous Justice Network*, which was created because of the ongoing and worsening conditions and overrepresentation of Indigenous people in Canada's courts and prisons within Canada's *Criminal "Just-Us" System (CJS)*.

As a "Traditionalist" Cliff has been recognized as a Cultural Teacher and has been accorded respect reserved for Elders. Cliff is a Sun Dancer & Sun Dance Chief, Pipe Carrier and has been a singer for the past 40 years. On December 8, 2021 Cliff celebrated 42 years of sobriety, determined to live "drug & alcohol free" to maintain and practice Indigenous Spirituality and Culture.

Erika Jensen, Great lakes Commission

Name of Presentation: A collaborative approach to managing invasive Phragmites in the Great Lakes region

Bio: Erika Jensen serves as executive director of the Great Lakes Commission, appointed in July 2021. As executive director, Ms. Jensen directs operations, manages relations with the Commission's Board of Directors and Commissioners, oversees policy and advocacy efforts, and collaborates with the agency's numerous partners to advance strategic regional priorities, among other duties.

Prior to her appointment, Ms. Jensen directed the Commission's aquatic invasive species (AIS) program. In that role she served as coordinator for the Great Lakes Panel on Aquatic Nuisance Species and Invasive Mussel Collaborative, and was the Commission's designee to the U.S. federal Aquatic Nuisance Species Task Force.

Ms. Jensen has been a member of the Commission staff in various roles since 2006. She has a master's degree in environmental management from Duke University and a bachelor's degree from Michigan State University.

Abstract:

Non-native *Phragmites australis* is a highly invasive wetland grass in North America, and managers are working to prevent new and manage existing established populations. In response to reports of difficulty in collaborating across the Phragmites community, the Great Lakes Phragmites Collaborative (GLPC) was formed in 2012 to support managers in achieving their diverse management goals. The Collaborative facilitates communication among stakeholders across the Great Lakes region and serve as a resource center for information on invasive Phragmites biology, management, and research. It does this through a structured collaborative process designed to improve the efficiency and effectiveness of inter-organizational partnerships working on challenging issues like invasive Phragmites. Central to the GLPC partnership is its common agenda, which lays out an agreed-upon path for addressing invasive Phragmites in the Great Lakes basin. Another way the Collaborative is supporting managers is through the Phragmites Adaptive Management Framework (PAMF). PAMF is a collective learning and participatory science program designed to find best management practices for Phragmites with the goal of addressing uncertainty and disagreement among experts about which management

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techniques work best. PAMF bridges the gap between research and management, allowing managers to contribute directly to, and benefit from, applied research. PAMF is speeding the pace of progress toward identifying best management practices by relying on data submitted by managers across the Great Lakes basin. Through collective action, PAMF serves and learns from Phragmites managers across the Great Lakes basin, while also supporting the goals and common agenda of the GLPC.

Heather Braun, ECCC-Canadian Wildlife Service

Name of Presentation: Large-scale Management of Invasive Phragmites in the Long Point Region of Ontario – Risks, Rewards and Lessons Learned

Bio: Heather Braun is a Habitat Biologist in the Stewardship Unit of the Canadian Wildlife Service in Ontario where she coordinates the Phragmites management program and supports landscape planning and implementation. Prior to joining the CWS in 2018, Heather spent two decades in the U.S. focused primarily on habitat restoration, wetland conservation and the development of partnerships to advance landscape-scale issues. She has held positions with the Great Lakes Commission, Ducks Unlimited, Inc., and the Texas Parks and Wildlife Department. She holds a Master of Natural Resources Management degree focused on wetlands and waterfowl, and a Bachelor of Arts Degree in psychology and zoology from the University of Manitoba.

Abstract: The rapid spread of invasive Phragmites throughout the Great Lakes region has displaced native vegetation and degraded coastal wetlands that provide critical habitat for Species at Risk and other wildlife. Expansion of Phragmites has been significant in the Long Point region of Ontario, where it covered >1,600ha. Long Point is a dynamic sand spit on the north shore of Lake Erie recognized internationally as a Ramsar wetland and a UNESCO World Biosphere Reserve. The region includes two National Wildlife Areas, a provincial park, hunt clubs and other conservation lands that provide habitat for 65+ federally-listed SAR. While landowners had different conservation goals, all had a shared objective to manage Phragmites. The province of Ontario, Nature Conservancy Canada and other partners initiated a collaborative effort to address Phragmites in Long Point in 2016; CWS initiated management on federal lands in 2019. Through 2021 >1,300ha of Phragmites has been treated using an Integrated Pest Management approach consisting of herbicide application followed by mechanical management. Implementation of this program was complicated by several factors, including lack of a registered herbicide for use in wetlands, the presence of SAR, and a limited number of experienced contractors. CWS conducted a risk assessment and ecological monitoring to assess the impacts on aquatic systems, vegetation and wildlife. Results show treatment efficacy of >97%, and the recolonization of native vegetation. This presentation will review risks, rewards, and lessons learned in Canada's first large-scale Phragmites management program, and highlight opportunities to advance collaboration on a national level.

Courtney Robichaud, Postdoctoral Fellow with Carleton University

Name of Presentation: Biotic communities respond positively to Phragmites australis control

Bio: As an ecologist, Courtney interested in using science and evidence to conserve our natural world. She recently completed her PhD at the University of Waterloo (Dr. Rebecca Rooney) where she studied invasive Phragmites australis management in freshwater marshes. This included working with a variety of taxa, such vegetation, invertebrates, and birds. She is continuing her work on wetland restoration at Carleton University, where she is studying how to improve decision making in conservation.

Abstract: Phragmites australis poses a threat to sensitive wetland habitat. However, the removal of large amounts of established vegetation via herbicide may also pose a threat to native biota. In Long Point, a Lake Erie coastal marsh, glyphosate-based herbicide was applied directly over standing water to control hundreds of hectares of P. australis. Despite being a common practice in the US, this was the first time that this approach has been used in Canada. Our work assessed how the marsh ecosystem responded to herbicide-based P. australis control. This included monitoring herbicide residue in the marshes, and how vegetation, macroinvertebrates, and aerial insectivore birds responded after treatment. Herbicide concentrations in soil and water were consistently very low. The reduction in plant biomass following herbicide treatment resulted in changes to the vegetation community and dramatically more Chironomids (non-biting midges) emerging from herbicide-treated areas. These changes resulted in ideal foraging habitat for aerial

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insectivore birds, with many individuals preferring to forage over the recently treated areas. Our research demonstrates that the large scale removal of *P. australis* altered the native community dynamics for a few years after treatment, but that these changes appear to be positive. We suggest managers take care to ensure highly-vegetation 'refuge' areas remain in treated wetlands, and encourage longer-term monitoring of communities were possible.

Janice Gilbert, Ontario Phragmites Working Group

Name of Presentation: An overview of the Ontario Phragmites Working Group

Bio: Janice is a wetland ecologist with a PhD in Environmental Science from the Ohio State University. She has been investigating invasive *Phragmites* impacts and appropriate control methods within sensitive habitats since 2007. She is the lead author on over 100 invasive *Phragmites* reports and presentations and has also contributed to the development of the Invasive *Phragmites* Best Management Practices (BMP), Roadside Smart Practices and Green Shovels, Strategic Framework for Coordinated Management in Ontario documents. Janice is currently the Executive Director of the Invasive Phragmites Control Centre, a not-for-profit organization she founded to facilitate effective, efficient, and environmentally responsible control. She also participates on the Working Groups for the Phragmites Adaptive Management Framework, and the Great Lakes *Phragmites* Collaborative, under the Great Lakes Commission, United States Geological Service. She founded the Ontario *Phragmites* Working Group in December 2011 and currently serves as Co-Chair.

Abstract: The Ontario Phragmites Working Group (OPWG) was founded on December 16, 2011. The first meeting was attended by 9 individuals with an interest in increasing the management of Phragmites throughout the province and our group has since grown to over 100 participants. In 2013, we became a committee under the Ontario Invasive Plant Council (OIPC) which provided our grass roots, volunteer-based organization with much needed administrative support. Through the OIPC, government funds were acquired to develop and manage a website and create numerous outreach materials including a Best Management Practices document. OPWG members also created a guiding document for control of Phragmites along roadsides. Our main purpose is to raise awareness and promote responsible management of invasive Phragmites in Ontario through education, stakeholder engagement, information sharing and advocacy for government support and better tools. More information about the OPWG will be provided as a potential model for other provinces.

Michael McTavish, University of Toronto, Mitacs Elevate Postdoctoral Research Fellow with Ducks Unlimited Canada

Name of Presentation: New tools for Phragmites management: Update on biological control in southern Ontario

Bio: Dr. Michael McTavish is a Mitacs Elevate postdoctoral research fellow working with the Smith Forest Health Lab at the University of Toronto and Ducks Unlimited Canada. His current research includes biological control of non-native invasive plants (*Phragmites* and garlic mustard) and the ecology of non-native earthworms.

Abstract: Biological control or "biocontrol" – the use of live organisms to suppress an introduced pest – has been in development for management of introduced *Phragmites* for over 20 years. By reuniting a pest with its natural enemies, biocontrol can be a self-sustaining, cost-effective management approach with low off-target environmental impact. Biocontrol of introduced *Phragmites* uses two species of stem-boring moths (*Archanara neurica* and *Lenisa geminipuncta*) that cause stem wilt and death through larval shoot mining. A petition to release the moths was approved in Canada in 2019 and the first pilot program is being carried out in southern Ontario. The objectives of this work are to carry out background surveys of introduced and native subspecies of *Phragmites*, develop core methods for rearing, release, and monitoring of the biocontrol agents, and to establish nurse sites of both species in Ontario. Since summer 2019, the Ontario pilot program has included a survey of *Phragmites* populations and laboratory and field tests of egg storage and insect release. To date, thousands of biocontrol agents have been released as larvae or pupae across seven test sites. Early monitoring of 2021 release sites has detected larval feeding and damage on *Phragmites*. Future work will continue to monitor these sites for long-term establishment and impact, and continue to develop and improve rearing, release, and monitoring methods at additional sites.

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Kristin Elton, New Brunswick Invasive Species Council

Name of Presentation: *Phragmites* on the Horizon: Responding to the impending invasion of *Phragmites Australis* in New Brunswick

Bio: Kristin Elton is the Program Director of the New Brunswick Invasive Species Council. Originally from Collingwood, Ontario, she moved to New Brunswick ‘temporarily’ while her partner went to Grad School, but like it so much they decided to stay. She has worked in the environmental non-profit sector since completing her B.A. in Environmental Governance and Masters of Environmental Studies in Planning, with a focus on public outreach and stakeholder engagement around conservation issues. Kristin joined the NBISC in August 2019, where she works with government and NGO partners to implement invasive species awareness programs and build capacity for invasive species management in the province. Kristin is joining us from Fredericton.

Abstract: Until relatively recently, the province of New Brunswick has been spared from the *Phragmites* invasions seen in other areas of North America; however, with extensive populations in neighbouring Quebec Nova Scotia, and Maine, it was only a matter of time before this invader started popping up in the province. This presentation will discuss work being done by the New Brunswick Invasive Species Council and Nature Conservancy of Canada to respond to this well-known but “new to us” threat, with the ultimate goal of preventing further invasion and the tremendous impacts seen in other jurisdictions.

Wesley Bickford, U.S. Geological Survey – Great Lakes Science Center

Name of Presentation: Cut-to-drown management: taking advantage of high Great Lakes water levels to control *Phragmites*

Bio: Wes Bickford is a Biologist at the U.S. Great Lakes Science Center in Ann Arbor, MI. Wes has a background in wetland ecology, invasive species, and plant-microbial interactions. He holds an M.S. in Wetlands Science from the University of Maryland and a PhD in Ecology and Evolutionary Biology from University of Michigan. At USGS, Wes explores novel management approaches to invasive species and other wetland threats utilizing plant-soil and plant-microbial interactions and has worked with *Phragmites* in the Great Lakes since 2013.

Abstract: "Invasive *Phragmites australis* is a significant problem in the Great Lakes basin and across North America, where it spreads rapidly through underground structures (i.e., rhizomes) and threatens biodiversity and critical wildlife habitat. Taking advantage of recent high Great Lakes water levels, managers have successfully controlled *Phragmites* stands by cutting stems under the water or cutting and then manipulating water levels above the cut stems to drown the plant (‘cut-to-drown’ method). However, several questions remain to determine if these management actions are effective across a wide variety of conditions in the Great Lakes. For instance, managers are unsure how long rhizomes remain viable after cutting, what season is best for cutting, and whether emergent zones connected to drowned *Phragmites* can “save” drowned patches. USGS and USFWS are addressing these management uncertainties through a series of controlled experiments and large-scale field studies.

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We conducted a controlled greenhouse experiment exploring Phragmites growth response to different cutting and submergence treatments. Phragmites plants greatly reduced belowground biomass or did not survive when subjected to either full submergence or cutting under water. In addition, rhizomes remaining after cutting and submergence had drastically lower sugar and starch content than those not receiving cut-to-drown treatments, suggesting the rhizomes are inviable and will not resprout. These results confirm anecdotal field evidence from managers, help inform methods for upcoming field experiments, and indicate that cut-to-drown management can be an effective, non-herbicide control for Phragmites in high water zones or in areas conducive to water level management.

Dr. Kurt Kowalski, U.S. Geological Survey – Great Lakes Science Center

Name of Presentation: Developing new Phragmites treatments based on genetic and microbial biotechnology

Bio: Dr. Kurt Kowalski is a research wetland ecologist at the U.S. Geological Survey Great Lakes Science Center based in Ann Arbor, MI USA. His research focuses on the restoration and management of Great Lakes coastal wetland habitats, including the development of novel management approaches for the invasive Phragmites australis. He has extensive involvement in the application of research results into practice and policy, including the development of adaptive management approaches and online decision support tools.

Abstract: Conventional approaches to managing invasive Phragmites (e.g., cutting, drowning, burning, herbicide) can be effective, but often they are resource intensive and not species specific. Therefore, innovative new treatments are being explored to provide resource managers with more tools to manage invasive Phragmites. One approach is focused on a natural plant defense mechanism that limits the expression of certain genetic traits, and a second approach is seeking to disrupt the symbiotic relationships between invasive Phragmites plants and their microbiome (e.g., bacteria, fungi) as a way to harm the plant. Advancements in biotechnology research are stimulating the development of new treatment options for resource managers targeting invasive Phragmites.

Gary Pritchard, Directions of Conservation and Curve Lake First Nation

Name of Presentation: Indigenous Perspectives of Invasive Species

Bio: Gary Pritchard ~Giniw (Golden Eagle) is Conservation Ecologist & Indigenous Engagement/Placemaking Specialist from Curve Lake First Nation, Ontario. Gary has had the privilege to work on behalf of Indigenous peoples throughout Ontario and Canada. He has travelled and worked in almost 300 Indigenous communities throughout Canada and the northern United States. He has brought a wealth of knowledge to both his Indigenous and non-Indigenous clients performing a wide variety of services including: Indigenous Community Planning, land-use/traditional knowledge studies, Indigenous land conservation and restoration, Ecological Monitoring using Two-eyed Seeing, Indigenous Placemaking, capacity building, expert testimony, mediation between western science and traditional science and subject matter expert on behalf of Indigenous communities. Gary loves to connect and educate people through nature. He does this through several mediums. His favourite way is through his wildlife photography and storytelling. He believes that if individuals especially youth can form a connection with nature then all people can make conscious decisions on how we impact Mother Earth and the next seven generations. Gary likes to spend much of his free time educating the youth about “All Our Relations,” with his most favourite students being his two children.

Abstract: As told in the use of storytelling from the Anishinabe Culture, this session aims to give participants the Michi Saagiig world view about invasive species. The cultural teachings surrounding species migration and how we need to work with all relations to cohesion on the landscape.

Brad Hayhoe, BASF Canada Inc.

Name of Presentation: Best Practices for the use of the new product Habitat® Aqua Herbicide

Bio: Brad Hayhoe is the Market Manager of Professional and Specialty Solutions for BASF Canada Inc. A major component of this role is Vegetation Management where BASF helps railways, utilities, highway maintenance departments, Oil and Gas Sites and NGOs keep invasive weeds controlled, enhance health and safety on their sites and keep reliable service. Brad is also the president of the Ontario Vegetation Management Association.

Abstract: This presentation will review the care that the PMRA takes to allow registration of a new herbicide like Habitat® Aqua Herbicide and the best practices to get the best results out of this great new tool. There are also some precautions and restrictions noted on the label which must be adhered to which will be reviewed. Hopefully this presentation will make your first experience with Habitat Aqua a rewarding one.

Becky Brown, B.C. Ministry of Forests, Lands, Natural Resource Operations and Rural Development

Name of Presentation: British Columbia Phragmites Early Detection Rapid Response

Bio: Becky Brown is a Professional Agrologist with the British Columbia (B.C.) Institute of Agrologists and an Invasive Plant Specialist with the B.C. Ministry of Forests, Lands, Natural Resource Operations and Rural Development. She has been working in natural resource management throughout B.C. for the past 25 years, focusing on invasive plants since 2003. Becky completed her undergraduate degree in Environmental Science at Royal Roads University and a technical diploma in Environmental Planning at Selkirk College. Her primary focus is coordinating the provincial Early Detection Rapid Response Program for invasive plants, including species risk assessments, report verifications, extent surveys, treatment trials, response planning, and establishing new treatment permits and registrations. She also provides technical support to land managers working with established aquatic and terrestrial invasive plants. Becky is based on Vancouver Island.

Abstract: An update on the status of *Phragmites australis* ssp. *australis* eradication in B.C. This presentation will include a description of the various management methods applied for detection, identification confirmation, treatment, and monitoring; in addition to a discussion of the challenges of managing this species on the land base and practical, science-based solutions.

Dr. Geraldine Allen, University of Victoria

Name of Presentation: Native and introduced *Phragmites australis* in British Columbia.

Bio: Dr. Allen is professor of plant biology at the University of Victoria, with interests in phylogenetic analysis, biogeography, conservation biology, and invasive species. She uses a variety of approaches, including molecular tools, to investigate patterns of genetic and geographic variation in plants.

Abstract: The native and introduced subspecies of *Phragmites australis* (Common Reed) both occur in western Canada. We sampled *P. australis* throughout its range in British Columbia and surveyed genetic variation using both chloroplast and nuclear DNA sequences. Out of 272 samples collected between 2012 and 2020, most were the native subspecies; we identified only 20 samples as non-native. Using the chloroplast markers described by Saltonstall, we detected four native haplotypes (one widespread in the province and three others more localized) and two introduced haplotypes.