Phragmites Management in the Township of The Archipelago

April 2018

Report produced by Georgian Bay Forever

Introduction

Phragmites australis subspecies australis (also known as the European common reed) is an invasive grass that grows into dense monocultures that severely impair wetlands, threaten biodiversity, reduce habitat, damage municipal and private property, and impede access to recreational activities.

Without action, the plant and its impacts will spread generating increased costs and management difficulties that diminish "the essence of the Township" that is "derived from its natural environment".[i] Dealing with *Phragmites* now will be much less costly, then trying to manage its growth later.

The plant in the Township of The Archipelago (The Archipelago) region is at a stage of emergence in most cases where it has been documented. There have been over 70 records inputted into EDDMaps Ontario to date in or on the border of The Archipelago, most in the South Section where there has been active mapping. There is likely a lot more not documented.

Management of invasive *Phragmites* must be done, but it is challenging.

The task currently has fallen largely to volunteers, NGOs, and municipalities to manage this plant while the provincial government works through a business and resource strategy to match their ecological goals.

The combined and coordinated efforts of volunteers, NGOs, and municipalities **are necessary** to avoid environmental degradation in our communities. They also can influence the government to move faster to enact policies in support of ecological goals for the long-term, and community efforts in the short term.

Report Purpose

This report outlines known participants in *Phragmites* management in The Archipelago with these objectives in mind:

a) Bringing efforts together. You are not working in a silo! Know that you are not alone in managing this plant to protect ecosystems and shoreline utility and enjoyment. There are many efforts going on all around The Archipelago, and much progress.

b) Share best practices. Practices evolve and new solutions are found with more experience. Sharing these experiences improves efficiency everywhere. In particular, there have been updates with regards to disposal in The Archipelago.

c) Provides contact details, and where to get training to join the efforts to manage invasive *Phragmites*.

In that spirit, **the report will summarize:**

- Activities that cottage communities and shoreline property owners in The Archipelago can undertake
- Actions by The Archipelago on *Phragmites*
- Efforts by the Ontario Ministry of Transportation
- Proposed 2018 plans for The Massasauga Provincial Park

This is a living document. If there are significant *Phragmite*s management activities not outlined in this report, please contact heather.sargeant@gbf.org.

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Cottage Communities & Shoreline Property Owners

Many individuals, cottage associations, and organizations have been trained to identify and cut *Phragmites* on shorelines in The Archipelago over the last couple of years and awareness has grown significantly and much progress has been made. However, we still need you! There are stands that need to be cut and monitored so that wetlands, habitats and shorelines can be restored.

The next section will detail:

a) The Process for Management along shorelines
b) Local contacts in your area to join a *Phragmites* fighting group

Photos courtesy of Katherine Denune and Heather Sargeant

A. The Process of *Phragmites* Management for Private Property and Crown Shorelines in The Archipelago.

Managing this plant requires **training and education** on:

- Identification (especially verses its native counterpart) and mapping or recording of sites
- Planning - prioritizing stands and resourcing for cuts and disposal; as well as community outreach
- Training on removal techniques - the how, when, and planning required to do the cuts or other management practices for best results
- Commitment – understanding the time and resources for multi-year cuts, monitoring of old stands, and vigilance required for any new stands that can be cut before they get established

It's hard work, but there are so many rewards. Every year, targeted stands require less work and native plants and wetland creatures do return to their habitat. You also get to share the experience with your neighbours!

The recommended process steps for private property and crown land shorelines in The Archipelago are as follows:

1. Identification and Mapping
2. Resourcing and Planning
3. Cutting
4. Disposal, a solution for The Archipelago
5. Monitoring

1. Identification and Mapping

There is a native Phragmites (*Phragmites australis* subsp. *americanus*) and a non-native invasive Phragmites (*Phragmites australis* subsp. *australis*) known as European common reed. Many volunteers are most concerned that they identify the invasive plant properly, as they both look very similar.

There are differences between the two; some that require a lot of expertise and having the different plants side by side. That is not often realistic when out in the field. However, these differences are important to review and here are some sources:

https://mnfi.anr.msu.edu/phragmites/native-or-not.cfm[ii]
http://gbf.org/invasive-phragmites/phragmites-identification/

When out in the field, **the 2 more easier identification features** are looking at the base colour of the stalk, and time of seed head emergence for mature stands.

1. Base of stalks

Native Phragmites: Red shiny stem

Non-native Invasive Phragmites: Tan, dull

2. Seed emergence and timing difference. Non-native invasive *Phragmites* turns into a much bushier seed head.

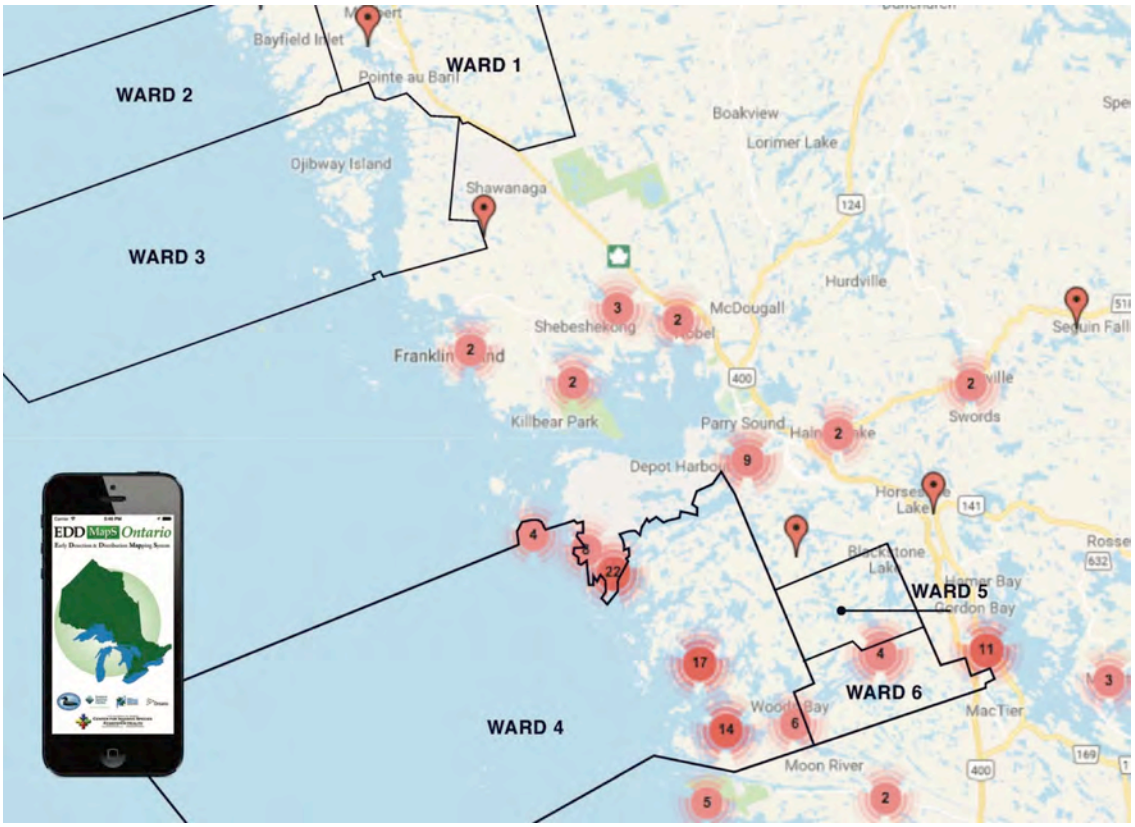
Photos courtesy of Lynn Short

Native Phragmites:
Flowers in July

Non-native Invasive Phragmites:
Flowers Mid-August to Sept

Citizens can help record the locations and advance of invasive *Phragmites.* This is critically important in order for communities to plan resources to fight *Phragmites* and to prevent duplication of efforts.

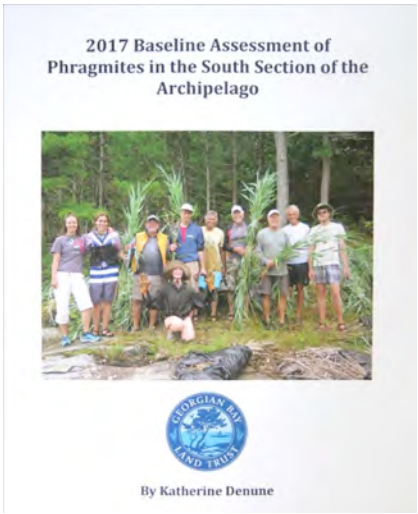
Current Mapping for The Archipelago shows that about 70 have been mapped in the border or in the Southern region over time; while the North does not appear to have been mapped. There have been several ad hoc reports of stands in the Northern areas. [iii]



1.EDDMapSOntario. 2018. Early Detection & Distribution Mapping System. The University of Georgia - Center for Invasive Species and Ecosystem Health. Available online at http://www.eddmaps.org/; last accessed February 23, 2018 & 2. Archipelago Wards powered by the West Parry Sound Geography Network. Retrieved February 23, 2018 at http://wpsgn.maps.arcgis.com/apps/webappviewer/index.html?id=189e1205c8ec4ae2b06e1733c5429170 [iii]

The tool for mapping this plant from your smartphone can be downloaded at: https://www.eddmaps.org/ontario/
Some further instructions on how to use it can be found at: gbf.org/invasive-phragmites

Included in the EDDMaps Ontario records are the efforts of **Katherine Denune**. Her report for the Georgian Bay Land Trust (GBLT) mapped 36 *Phragmites* stands on the coastlines of the South Section of The Archipelago. That report, *2017 Baseline Assessment of Phragmites in the South Section of the Archipelago* [VI], has been distributed to council members of The Archipelago.



2. Resources and Planning

This is a critical part of effective *Phragmites* management. The size, number, and location of the stands are going to be determinants in the number of volunteers, partnerships, and tools that you will need.

There are many regulations around *Phragmites* removal, and it should not be attempted without proper knowledge, training, safety precautions, and permits and licences as applicable.

References:

On Land - http://www.opwg.ca/resources/best-management-practices/
*This above 2011 management guide is out of date for shorelines and water where techniques have been proven since 2011.

On Shorelines or in Water **-** The "Selective cut method"[iv] aims to do the "most good with the least amount of harm". It essentially seeks to remove only the invasive plant at a time when it can most weaken its powerful underground root system. It is manual and mechanical cutting, necessary for shorelines and in water as there are no approved *Phragmites* herbicides for over water use.

Training: Georgian Bay Forever trains community leaders and their volunteers for coastal *Phragmites* removal and has received a letter of support from the Ministry of Natural Resources and Forestry to train on this process for Crown and Private Property. Georgian Bay Forever can also direct volunteers or citizens to any existing community leaders in their area who have had Georgian Bay Forever training so they can join the phragbusting effort.

3. Cutting: Removal of *Phragmites* on shores

Timing - Mid-July to Mid-August, before seeds emerge

Tools, safety, resources and requirements – these are outlined at gbf.org/invasive-phragmites and are also dependent on the size, location, and number of stands identified to be tackled.

The basic principals behind the selective cut method are the following:

- Follow safety procedures outlined at gbf.org[v].
- The timing means that there should be no seed heads. If there happen to be, please cut the heads off first and place them carefully into yard waste bags to be burned later in a burn barrel.
- Using a handheld cutter, **cut underwater as close to the sediment level without endangering yourself. Do not cut** just below the water surface, as water levels fluctuate in Georgian Bay and the leftover stalk when exposed to air can help transport oxygen to plants nearby. On shore land with soft substrates like beaches, cut slightly below the sediment with a spade. **You are not trying to remove any of the huge mass of underground roots or rhizomes – simply the green stalk.** Disturbing the vast underground root and rhizome system could lead to their spread, as tiny pieces can break off and become new plants. If there are dead stalks (thatch), cut and bundle those too.

- Work your way from the outer perimeter to inside.
- Watch the perimeter of your cut for any potential pieces of *Phragmites* and rake them in.
- Take cut stalks, place lengthwise and bundle 20-40 stalks with natural twine. Carry to a designated spot at the site, far enough from the water that they do not risk getting into the water with wind or if water levels change (preferably with sun). The site is needed to allow the cut stalks to dry out and decay over time. Monitor the site next year in the possible, but improbable case that there are new *Phragmites* sprouting.

- It usually takes 2 to 5 years of annual cuts depending on the size of the stand.
- It's tough - but it works by weakening the plant over time. By removing the green stalks before they seed, you are preventing the plant from photosynthesizing and drowning the stub that is left. There will still be some energy left in the extensive plant root system, but next year's patch will be very diminished, reducing your cutting time every year.

4. Disposal is a key planning issue

While the gold standard for disposal would be that the municipality provide an easy access to an invasive plant disposal facility, there is no appropriate disposal facility in The Archipelago. Even if there were, the location of many stands, with water access only, require large transport rides that increase risk of spread. Gathering and burning the plant materials is problematic as it too often requires large distances of transport risking spread by accident, and the burning itself is extremely difficult given regulations around fires in The Archipelago.

The recommendation for The Archipelago is to designate a place **at the site** that is well away from the water, where bundled stalks can decompose while being monitored for any (unlikely) growth in subsequent years. The disposal process works this way:

- The plant stalks are cut before viable seed heads appear. If there are seed heads, they are cut first, and placed in yard waste bags for later burning in a burn barrel.
- The plant stalk 'cut' includes only the stalk and leaves – not the underground roots and rhizomes that can germinate in the right conditions.
- The plant stalks are bundled 20-40 stalks with natural twine.
- Trained people will carry the plant stalk bundles to a pre-designated plot of land away from the shoreline. Ideally mostly rock and in the sun if possible. Cut stalks need to be deposited where they can dry out and decay, and bundled so they cannot blow away and into the water.
- To eliminate any small chance of growth at disposal sites, the disposal sites are monitored every year to check for any growth at the site, which would then be dispatched.

5. Monitoring

There are 2 aspects to monitoring.

- Stands can take anywhere between 2-5 years to eradicate depending on the size of the stand. Make sure to return to previous sites and monitor and manage new growth. At that time, also monitor the in situ disposal site to make sure that no accidental growth may be happening there. If there is, dispatch immediately. Each year will see growth diminish with the hardest year being the first year.
- Be on the lookout for any new stands. It is important to keep vigilant for any new stands and map and manage them accordingly.

B. *Phragmites* Contacts for shorelines in The Archipelago

1. Georgian Bay Forever (GBF) **–** This registered charity has been working to train communities to fight invasive *Phragmites* for over 6 years. To learn more about invasive *Phragmites* and leaders in your community, more info is available at www.gbf.org. Within the Sans Souci area towards Parry Sound, GBF will be managing 2 students in the summer of 2018 to train communities to map, prioritize, cut stands, and recruit volunteers for bigger cuts.

2. The Georgian Bay Association (GBA) - The Georgian Bay Association is an umbrella group of 17 cottage associations along the eastern and northern shores of Georgian Bay. Their mandate is to act as stewards of the fragile and finite water and land resources of the Bay. The GBA has a *Phragmites* committee and actively encourages members to tackle this plant.

Phragmites Leaders by Cottage Association

1. Bayfield Nares Islanders - Anne Stewart, astewart.anne@gmail.com

2. Pointe au Baril – Scott Sheard, sheard@rogers.com

3. Sans Souci and Copperhead - Katherine Denune kdenune2@gmail.com

4. Woods Bay - Sue McPhedran, psmcphedran@gmail.com

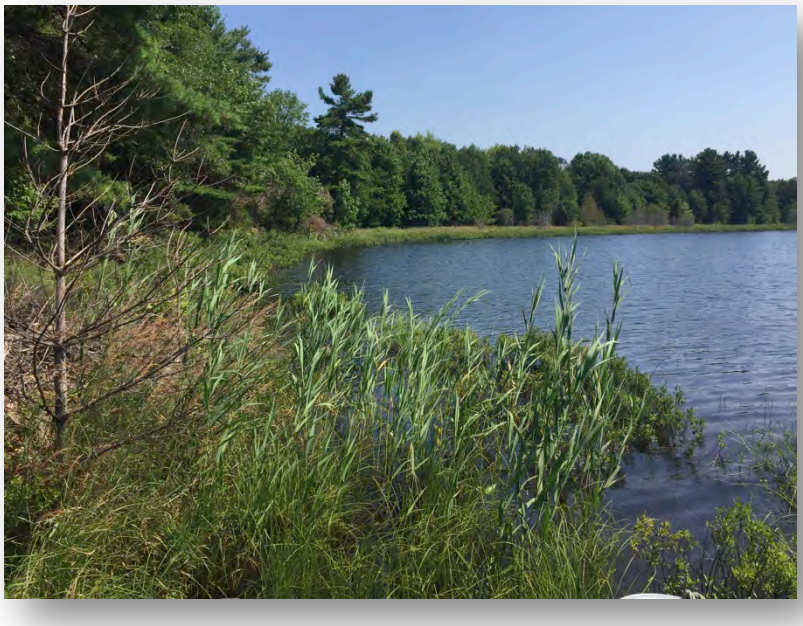
5. Blackstone Lake Association - Rob Moos, robert.moos@sympatico.ca

6. Manitou - Tom Pinkham - tomandgrainne@gmail.com

7. South Channel - Peter Adams, p.adams36@gmail.com

3. The Georgian Bay Biosphere Reserve (GBBR) **-** Designated by UNESCO in 2004, the Georgian Bay Biosphere Reserve is an area of 347,000 hectares that stretches 200 km along the eastern coast from Port Severn to the French River, in the world's largest freshwater archipelago, also known as the 30,000 Islands. The GBBR educates and partners with organizations to manage invasive *Phragmites*.

4. The Georgian Bay Land Trust (GBLT) – a not-for-profit registered charity supported by people who love and want to protect the wilderness of Georgian Bay for current and future generations. The Land Trust monitors and removes invasive species from GBLT Lands. In 2017, Katherine Denune mapped and identified 36 patches of Phragmites through the GBLT's King Family Bursary. The report is called: *2017 Baseline Assessment of Phragmites in the South Section of the Archipelago*.



The Ontario Ministry of Transportation Update for the Northeastern Region

Ian Austin - Ministry of Transportation (MTO), General Services Co-ordinator, Provincial Highways Management

In the Summer/Fall of 2017 ministry staff did the fieldwork to identify *Phragmites* locations (GPS co-ordinates) across all five maintenance areas in Northeastern Region (Huntsville, North Bay, New Liskeard, Sudbury, and Sault St. Marie). The information is currently in a spreadsheet format and we are working with our Engineering section to have the information mapped. No spraying of *Phragmites* was done on provincial highways in the Port Severn area due to the presence of standing water in 2017. MTO did cut some *Phragmites* in that area. The ministry obtained approval from the MNRF for spraying on the Hwy 11 corridor between Bracebridge and Gravenhurst in the fall of 2017.

In 2017, the ministry hosted a roadside vegetation management workshop that included representatives from MTO (environmental/maintenance), MNRF, OMAFRA and MOECC. The workshop was to develop a strategy to manage vegetation along provincial roadsides throughout the planning, design, construction and maintenance phases to ensure consistency with respect to preventing and managing invasive vegetative species and noxious weeds while protecting native vegetative species to promote biodiversity including pollinator habitat.

The MTO is making efforts in 2018 to further develop and document *Phragmites* inventories as a management tool for tackling these invasive species. MTO is currently developing an internal approach in the form of the MTO Vegetation Management Working Group that includes representatives from across the ministry, to effectively manage vegetation along provincial roadsides, that also includes the effective management of invasive species while protecting native and endangered species and promote biodiversity. The group is working on a co-ordinated provincial approach to prioritize the treatment and control of *Phragmites* in the provincial highway system and to

establish ministry specific best practices. The MTO will continue to support the work of the Ontario Invasive Plant Council (OIPC) in particular the Ontario Phragmites Working Group that focuses on improving the management of *Phragmite*s by educating municipalities, conservation authorities and environmental groups in best management practices to address *Phragmites* in Ontario.

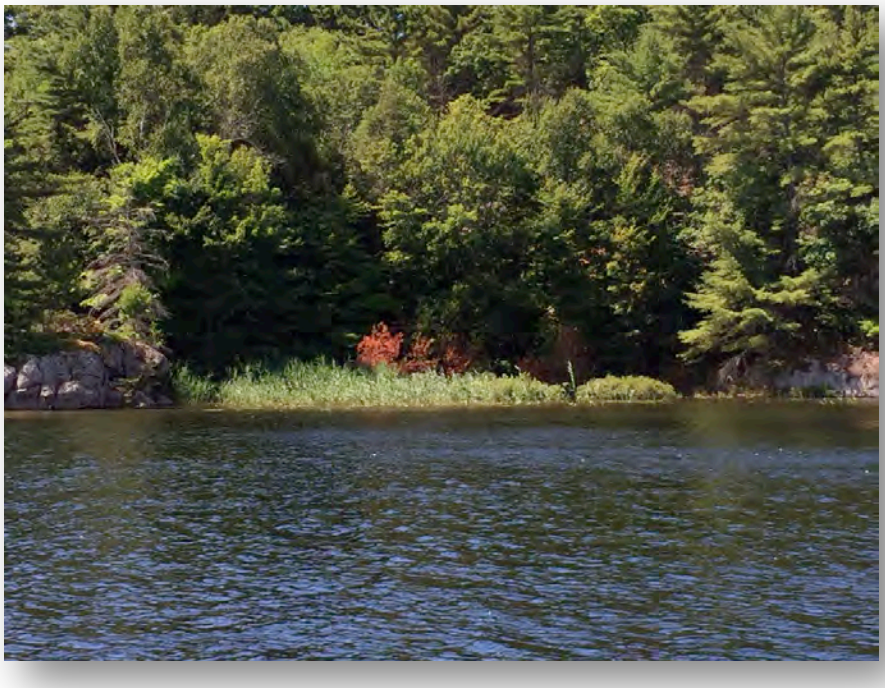
Staff in Northeastern Region are currently developing our plans to address *Phragmite*s in 2018, both regionally and provincially. Our efforts are constrained by the current best practices that existing to treat *Phragmites*.

The Massasauga Provincial Park

In 2017, 14 stands of invasive Phragmites were mapped on the shorelines of The Park by Katherine Denune, who received support through the King Family Bursary of the Georgian Bay Land Trust. (Details in Katherine's Report)[vi]

The Park is making tremendous efforts to have resources approved for this summer to tackle the stands, including 2 days that will require community volunteers from the Sans Souci Association, Woods Bay Association, Friends of Massasauga Park, the South Channel Association, Iron City and more. Please contact your local cottage association and have them contact Georgian Bay Forever to get involved at (905) 880-4945 x 4.

Thank you to the *Phragmites* working group for advancing a plan to resource tackling the invasive in the park starting in the summer of 2018. The working group includes: The Massasauga Provincial Park represented by Mike Foley (Superintendent), Georgian Bay Forever, Friends of The Massasauga Park (Sue McPhedran), Katherine Denune from Sans Souci and Copperhead Association, and Peter Adams from the South Channel Association.



The Township of The Archipelago

Cale Henderson, Manager of Development and
Environmental Services
Mike Kearns, Manager of Operational Services

The Township of The Archipelago is actively monitoring, mapping and employing appropriate control measures to *Phragmites* located on Municipally Maintained roads through a combination of herbicide control and a cutting program where necessary to help control the spread of Phragmites.

The Township is also an active participant with the *Phragmites* Adaptive Management Framework (PAMF) with the Great Lakes *Phragmites* Collaborative (GLPC) which aims to share *Phragmites* Best Management Practices across the Great Lakes Basin with the goal of focusing on improving the effectiveness and efficiency of management and monitoring activities.

Conclusion

Recently restricted in Ontario, invasive *Phragmites*, is established or emerging in Georgian Bay threatening biodiversity, wetland functionality, and enjoyment of the natural shoreline.

Management and awareness of this plant varies, and inaction in regions enables the spread of this plant and can interfere with the success of nearby management efforts.

Continued coordinated efforts and communication between stakeholders will ensure continued success at stopping this plant from taking over in The Archipelago**.**

There is substantial benefit in managing this plant in The Archipelago through training, education, partnerships and gap analysis. Community engagement should be encouraged and as a next step, financially supported by associations and The Archipelago because it increases interaction and appreciation for the environment and saves money in the long run.

With continued collaboration, we can eradicate this plant from The Archipelago's shorelines! Please feel free to contact Georgian Bay Forever at (905) 880 – 4945 about invasive *Phragmites* management.

David Sweetnam
Executive Director
Georgian Bay Forever

Special Acknowledgements from Georgian Bay Forever

- Katherine Denune for her tireless efforts and amazing report on Phragmites in the South Archipelago
- Members of The Massasauga Park Phragmites working group – Sue McPhedran (Friends of Massasauga Park), Peter Adams from the South Channel Association, Mike Foley, Superintendent of the Massasauga Park
- The Georgian Bay Biosphere Reserve and the Eastern Georgian Bay Stewardship Council for their collaborative support of *Phragmites* eradication
- Lynn Short - Lynn Short is a Professor of Horticulture at Humber College, she is an incredibly dynamic and hands on community organizer & *Phragmites* eradicator in the Wymbolwood Beach area near Midland, where she has cottaged more than 40 years. She has shared her valuable expertise and also many pictures with GBF.
- Kathryn Davis – *Phragmites* leader in Honey Harbour and director of the Honey Harbour Association. Thank you for the passion, expertise, and pictures.
- The Ontario Phragmites Working Group. A committee of the Ontario Invasive Plant Council, this organization is dedicated to reducing the current threats posed by this aggressive invasive plant to biodiversity and Species at Risk (SAR) through habitat protection and restoration.

Appendix:

Additional facts

- *In 2005, researchers* at Agriculture and Agri-food Canada ranked *Phragmites australis* (hereinafter referred to as *Phragmites*) as Canada's worst terrestrial invasive plant (Catling, 2005).
- Invasive Phragmites are restricted by the Ontario Government in its new rules for the Ontario Invasive Species Act.
- The Great Lakes St. Lawrence Cities Initiative has passed Resolutions calling for governments on both sides of the border to take more action
- Aquatic Invasive Species and Habitat and Species are annexes of the binational Great Lakes Water Quality Agreement. Invasive *Phragmites* impact what Canada and the US have agreed to:

  "… contribute to the achievement of the General and Specific Objectives of this Agreement by conserving, protecting, maintaining, restoring and enhancing the resilience of native species and their habitat, as well as by supporting essential ecosystem services."
- *Phragmites* forms a dense monoculture, which prevents the growth of native species and therefore degrades habitat for Species at Risk such as the Blanding's turtle (OMNR, 2011).
- It jeopardizes the continued persistence of globally rare endemic coastal marshes such as the provincially significant Silver Creek Wetland Complex along with the Collingwood shoreline.
- *Phragmites* has become established in many locations along the Georgian Bay shoreline and continues to spread.
- Being proactive in the removal of existing stands and managing new incursions will help control the invasion of *Phragmites*.
- It will improve conservation of aquatic habitats and species by being a part of the province-wide effort to control *Phragmites* and provide a drive to protect a critical part of Ontario's environment and economy.
- Significant control efforts are already present along portions of the Georgian Bay shoreline.

End Notes and References

[i] Residents. Township Profile. www.thearchipelago.on.ca. Retrieved February 26, 2018 at

[ii] *Phragmites. Native or Not.* Michigan State University Extension website. Retrieved February 23, 2018 at https://mnfi.anr.msu.edu/phragmites/native-or-not.cfm.

[iii] This map is an amalgamation 2 maps:1. EDDMapS. 2018. Early Detection & Distribution Mapping System. The University of Georgia - Center for Invasive Species and Ecosystem Health. Available online at http://www.eddmaps.org/; last accessed February 23, 2018 & 2. Archipelago Wards powered by the West Parry Sound Geography Network. Retrieved February 23, 2018 at http://wpsgn.maps.arcgis.com/apps/webappviewer/index.html?id=189e1205c8ec4ae2b06e1733c5429170

[iv] Academic References: 1. Invasive Phragmites (*Phragmites australis*): Habitat preference, impact on native plant and the benefit of stem cutting to control spread Prabir Roy Parks Canada, Midland, ON L4R 4K6. 2. Also, popularized by Lynn Short, Professor of Horticulture at Humber College, and 3. Dr. Janice Gilbert, wetland ecologist and founding member of the Ontario Phragmites Working Group.

[v] Safety procedures can be found at this url: https://georgianbayforever.org/wp-content/uploads/2016/07/GBF_Science_Invasive-Species_Phragmites_Safety_Phragmites-Cutting-Work-Day1.pdf

[vi] The Phragmites stands in The Massasauga Provincial Park are detailed in Katherine Denune's report, 2017 *Baseline Assessment of Phragmites in the South Section of the Archipelago*, which was made possible by the King Family Bursary of the Georgian Bay Land Trust.