2017 Baseline Assessment of Phragmites in the South Section of the Archipelago

By Katherine Denune

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About this Project

Phragmites australis is considered one of the most environmentally destructive and invasive plants in North America for its ability to rapidly grow dense monocultures that eliminate native plants and wildlife habitat.

The purpose of this project is to provide an accurate and current baseline of the existing Phragmites patches in the South Section of the Township of the Archipelago including Crown land, private property and the Massasauga Provincial Park. This document provides photographs, GPS location, size and density for the current (Summer 2017) Phragmites patches in this region of the Eastern Georgian Bay. Density for each patch is rated on a scale from 1 to 5 with 5 representing the densest patches.

This project was made possible by the King Family Bursary of the Georgian Bay Land Trust. As a 2017 King Bursary Award Recipient, I extensively explored the South Section of the Township of the Archipelago by boat, surveying shorelines for Phragmites patches during a six-week period in July and August. Consultations with Dr. Janice Gilbert, an Ontario Phragmites expert, and with Georgian Bay Forever have provided guidance to ensure this report's baseline research, recommendations and removal guide will be beneficial to our region's future management of invasive Phragmites.

November 2017

The Phragmites Threat

Phragmites, or the European Common Reed, is an aggressive, invasive plant that threatens wetlands. This invasive reed can quickly turn a once diverse and functional wetland habitat into a dense Phragmites monoculture that is unable to support wildlife or provide other important ecosystem services. The Eastern Georgian Bay is rich with coastal areas and dynamic wetlands. These wetlands provide spawning grounds for fish and are a critical habitat for turtles, marsh birds and other aquatic organisms. Anyone who has visited Lake Erie has seen the damage caused by Phragmites on a Great Lakes ecosystem. Much of the shoreline of Lake Erie is covered with dense Phragmites patches. Fortunately, by appropriately tackling this aquatic threat in its early stages, we still have the opportunity to maintain our beloved shores of the Georgian Bay Phragmites free.

Current State of Phragmites

Thirty-six current Phragmites patches were identified in the summer of 2017 in the South Section of the Township of the Archipelago (Parry Sound to the mouth of Twelve Mile Bay). This range includes the South Channel Association, the Sans Souci and Copperhead Association, the Wood's Bay Association, the Manitou Association and the Massasauga Provincial Park. Over the past three years community volunteers have worked on multiple patches in this region. These laudable efforts have successfully eliminated some patches and greatly reduced others.

While community interest and removal efforts have been increasing, the current extent of Phragmites is too large to be eradicated by community volunteers alone. Seven of the patches located in the Massasauga Provincial Park are at least 100 square meters and one patch is approximately 400 square meters. Volunteers are able to cut on Crown land and private property (with permission) following the selective cut method as approved by the Ministry of Natural Resources and Forestry (MNRF)[1]. However, for the Massasauga Provincial Park, permission and supervision are required for volunteers. A "working group"[2] has been established to present a Phragmites coastal management plan to the Massasauga Park with the goal of moving forward with their cooperation in 2018. The presence of Phragmites on private property and Crown land will continue to increase if these large mature patches remain on parkland.

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[1] Georgian Bay Forever has a letter of support for training citizens on the selective cut

[2] The Working Group is comprised of Georgian Bay Forever, Sue McPhedran from Friends of Massasauga, Katherine Denune, Peter Adams and Mike Foley (Superintendent of the Massasauga Provincial Park) and has the support of the GB5. More members will be added with time.

Recommendations

To reduce and manage the Phragmites in the South Section of the Archipelago, efforts are required from the Massasauga Provincial Park and the Township of the Archipelago as well as continued work from community volunteers. Each respective entity has their own responsibilities and their own unique capacities to help remove Phragmites in our section of the Eastern Georgian Bay.

Massasauga Provincial Park
The Massasauga Provincial Park currently contains the largest patches and represents roughly a third of the Phragmites patches in our area. These patches need to be removed as soon as possible as they are spreading and acting as sources for new patches. Trained community volunteers are willing and committed to remove these patches. The solution lies in an adoption of a management plan for the Park, and the "working group" is starting discussions with the Park in Fall 2017 with a goal for starting implementation in Summer 2018.

Township of the Archipelago
As our local government body, the Archipelago has the opportunity to support and encourage its residents in the removal of Phragmites. This support is necessary to effectively manage Phragmites' shoreline encroachment. I strongly recommend the Archipelago communicate with lead community volunteers to understand their needs. More specific recommendations include:

- Hire a trained student, community member, or professional to cut Phragmites on Crown land and shorelines to reduce some of the pressure felt by community volunteers. This assistance could also be available to private property owners for hire who are unable to cut it themselves.
    - The Township of the Georgian Bay has given Georgian Bay Forever an on-going grant for community "Phragbusting". With this grant, Georgian Bay Forever hires and trains students to help community leaders and cottage associations exponentially increase Phragmites management and volunteer engagement. For example, in one community, 180 Phragmites stands were mapped, with 80 being cut. In previous years, only a few were cut. This could be a consideration for the Archipelago.
- Provide and supply current information to community members about the presence of Phragmites.
    - Distribute removal guides to community residents.
- Engage with the Massasauga Provincial Park to see where collaboration or financial support may be possible.

This report only covers the South Section of the Township of the Archipelago. The Township may also consider hiring a student, community member, or professional to complete a similar comprehensive report in the North Section of the Archipelago.

Special Appreciation

Special thanks to Heather Sargeant, Brian Rhode, Peter Adams, Rupert Kindersley and Matt Reiter for their outstanding work in both organizing community removal efforts and hours spent removing Phragmites. Georgian Bay Forever (GBF) has been instrumental in providing Phragmites removal training clinics and in helping support local community efforts. I would also like to recognize Jill Einstein and Brian Cantwell Smith for their enthusiasm and commitment to removing the large stand of Phragmites on Amanda Island (which is almost entirely gone)!

In addition, the Georgian Bay Land Trust has been organizing community removal events on Sandy Island with community leaders and experts from the Nature Conservancy of Canada for several years.

Personal Motivation:

While studying at Stone Laboratory on Lake Erie, I have witnessed firsthand just how aggressive and devastating Phragmites can be, destroying shorelines and fragile wetland habitats. As a university Senior, majoring in Ecology, I understand the vital importance of wetlands, both for water quality and for providing habitat necessary for a healthy lake's food web.

Over the past three summers as a member, and now chair of the Sans Souci and Copperhead Association Environment Committee, I have organized volunteer community efforts to further educate residents and to remove and map Phragmites patches in South Chanel, Spider Bay and Sans Souci.

I would like to express my profound gratitude to the King Family Bursary of the Georgian Bay Land Trust for selecting me as a 2017 Award Recipient with funding that has made this baseline assessment of invasive Phragmites possible.

Phragmites Patch Organization and Maps

The following several pages organize the 36 documented Phragmites patches. Each patch has been given an identification number in order of its location from north to south. Additionally, patches have been listed by their corresponding property type.

Note: For ease of listing purposes, patches have been categorized by the property type where they are located. Some patches are located entirely in the water and are therefore only adjacent to the specific land type. This classification depends on the water level for any given year.

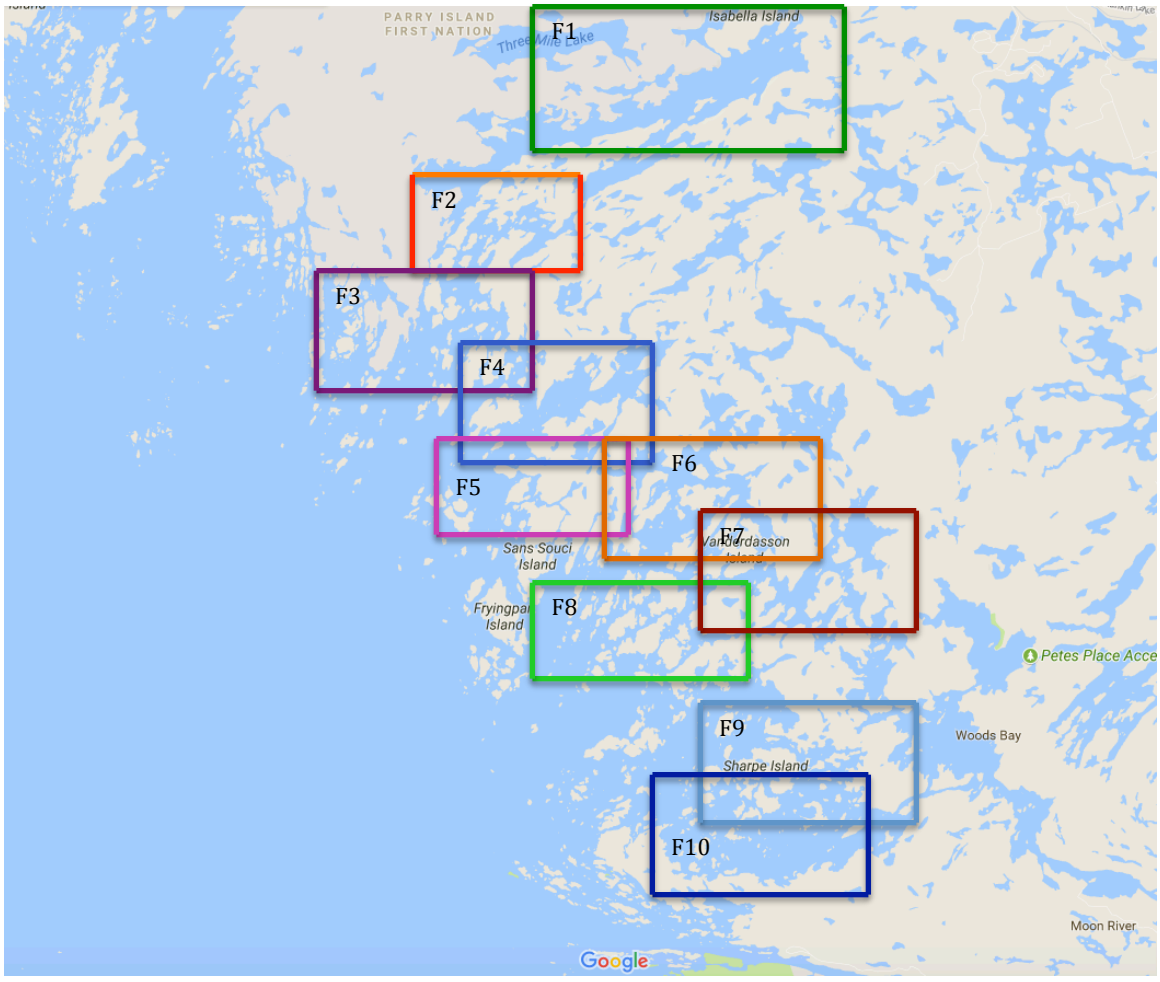
Phragmites Patch Identification and Page Numbers

Organization by Property Type

Property Type	Patch #
Private Property (13 Total)	
Channel Island	1
Southside of Channel Island Bay	2
Liberty Island	3
West of Squirrels Cove	4
McLaren Island (Large Patch)	10
Amanda Island	12
Tranquility Island	15
Ruby Island	17
Hambly Point, Spider Bay	19
Blanchette Island	20
Echo Island	21
Katerjan Island	28
B78	35
Massasauga Provincial Park (14 Total)	
Between Devil's Elbow and Craganmore	5
Devil's Elbow Park Dock	7
Echo Bay	22
Kinnear Island	23
Swimming Snake Bay	24
Sucker Creek (Small)	25
Sucker Creek (Large)	26
Vanderdasson Island	27
Moon Island (Bowery Bay)	29
Shotgun Bay (Port Rawson Bay)	30
North of Miron Island	31
Moon Island (Across from Francis Island)	32
Moon Island (Near Island B46)	33
B35	34
Crown Land (9 Total)	
McLaren Island (West of Devil's Elbow)	6
Sloan Island Marsh	8
Sloan Island	9
Devil's Elbow Dump	11
Peak Island (Outer)	13
Peak Island (Inner)	14
Cormie Island	16
Bernyk Island	18
Loon Island (Near Portage)	36

Map of Surveyed Area

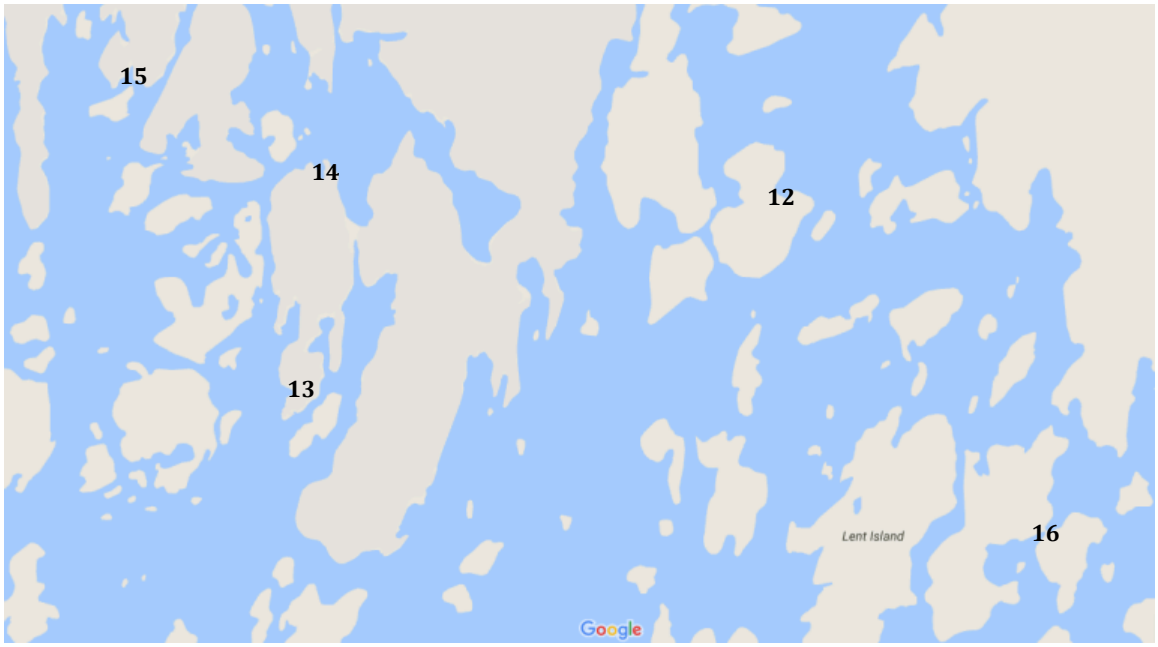
The image below shows the total area surveyed for Phragmites in this project (from Parry Sound to the mouth of Twelve Mile Bay). The following pages include the enlarged frames outlined in the map below. Each patch has been marked with its identification number in its corresponding frame. All of the 36 Phragmites patches documented in 2017 are found within these ten frames.



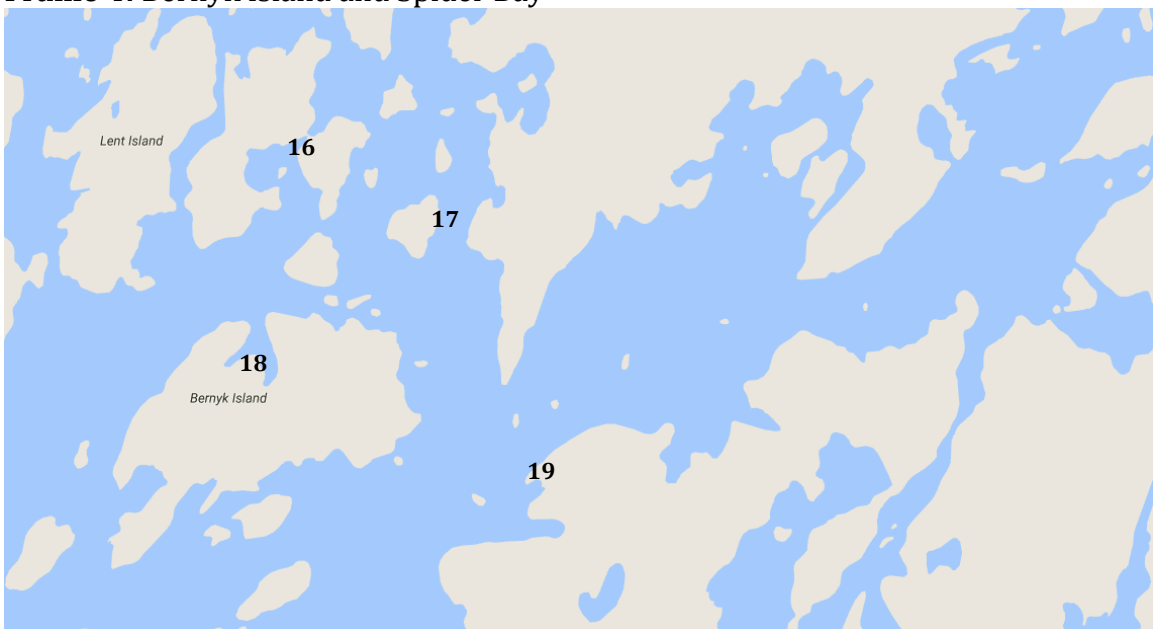
Frame 1: Isabella Island to McLaren Island

Frame 2: Seven Mile Narrows to Maud Island

Frame 3: Amanda Island to Bear's Head



Frame 4: Bernyk Island and Spider Bay



Frame 5: Outer Spider Bay and Sans Souci Island

Frame 6: Kinnear Island to Vanderdasson Island

Frame 7: Wahsoune Island Area

Frame 8: Vanderdasson Island to Miron Island

Frame 9: Southern Moon Island and Sharpe Island

Frame 10: Sharpe Island to Iron City Fishing Club and Loon Island

Individual Phragmites Patch Information and Photographs

The following pages include information on each of the 36 patches. Sites are listed in order of their given identification numbers. Each page provides information on property type, GPS location, density, size, a photograph and a mapped location. Density for each patch is rated on a scale from 1 to 5 with 5 representing the densest patches.

1. Channel Island

Private Property

Latitude: 45°17'52.99"N
Longitude: 80° 3'7.74"W

Density Rating: 3
Size: 9x3 m

2. Southside of Channel Island Bay

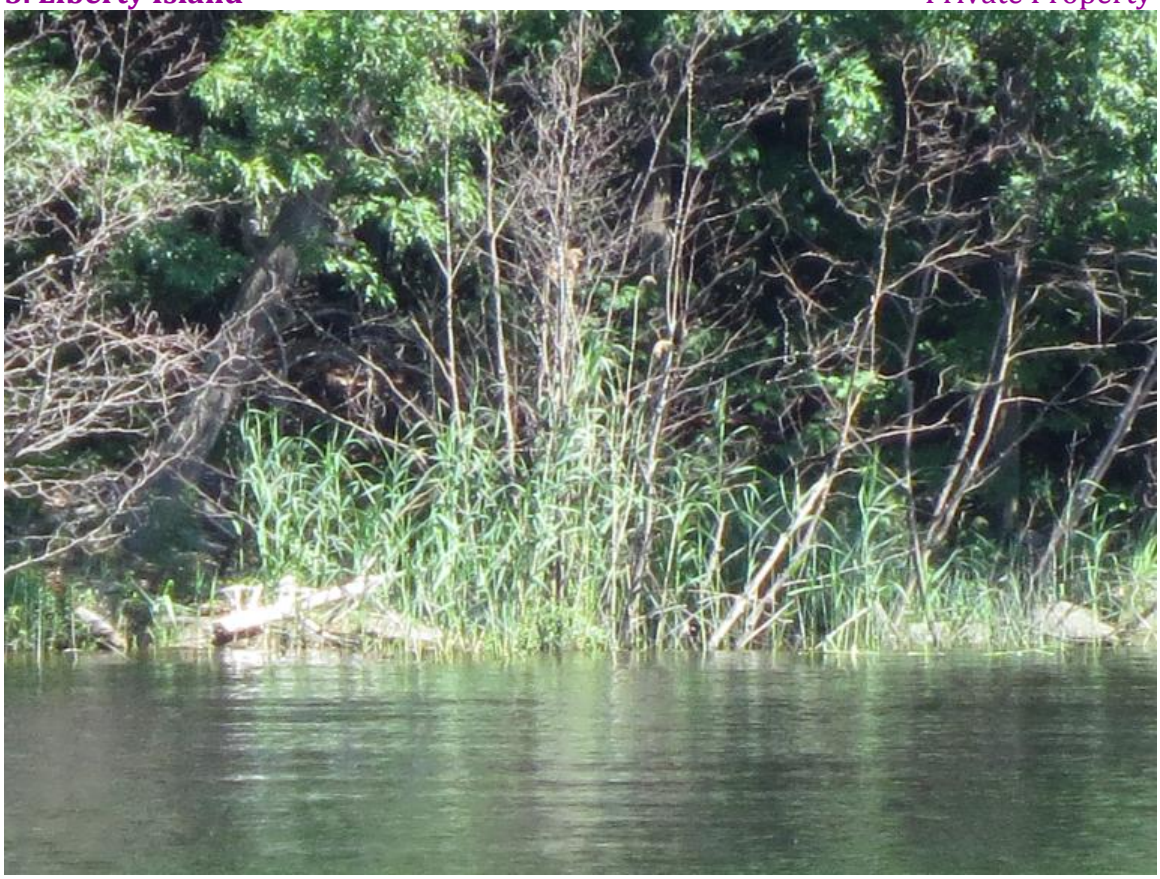
Private Property

Latitude: 45°17'58.82"N
Longitude: 80° 2'38.89"W

Density Rating: 5
Size: 5x3 m

3. Liberty Island

Private Property



Latitude: 45°17'40.07"N
Longitude: 80° 2'45.00"W

Density Rating: 3
Size: 3x2 m

4. West of Squirrels Cove

Private Property

Latitude: 45°16'56.85"N
Longitude: 80° 3'41.24"W

Density Rating: 5
Size: 25x12 m

Note: This patch was cut for the first time in 2017.

5. Between Devil's Elbow and Craganmore

Massasauga Provincial Park

Latitude: 45°15'12.73"N
Longitude: 80° 7'51.51"W

Density Rating: 2
Size: 15x8 m

Notes: This patch was partially removed in 2016 and did not grow back in the areas where it was cut.

6. McLaren Island (West of Devil's Elbow) Crown Land

Latitude: 45°15'17.67"N
Longitude: 80° 8'19.06"W

Density Rating: 1
Size: 5x1 m

7. Devil's Elbow Park Dock

Massasauga Provincial Park

Latitude: 45°15'6.60"N
Longitude: 80° 8'12.09"W

Density Rating: 3
Size: 10x5 m

Notes: This patch was cut once in 2016 with a weed-whipping device. It is not as tall as it was in 2016, but appears to have grown back with the same thickness.

8. Sloan Island Marsh

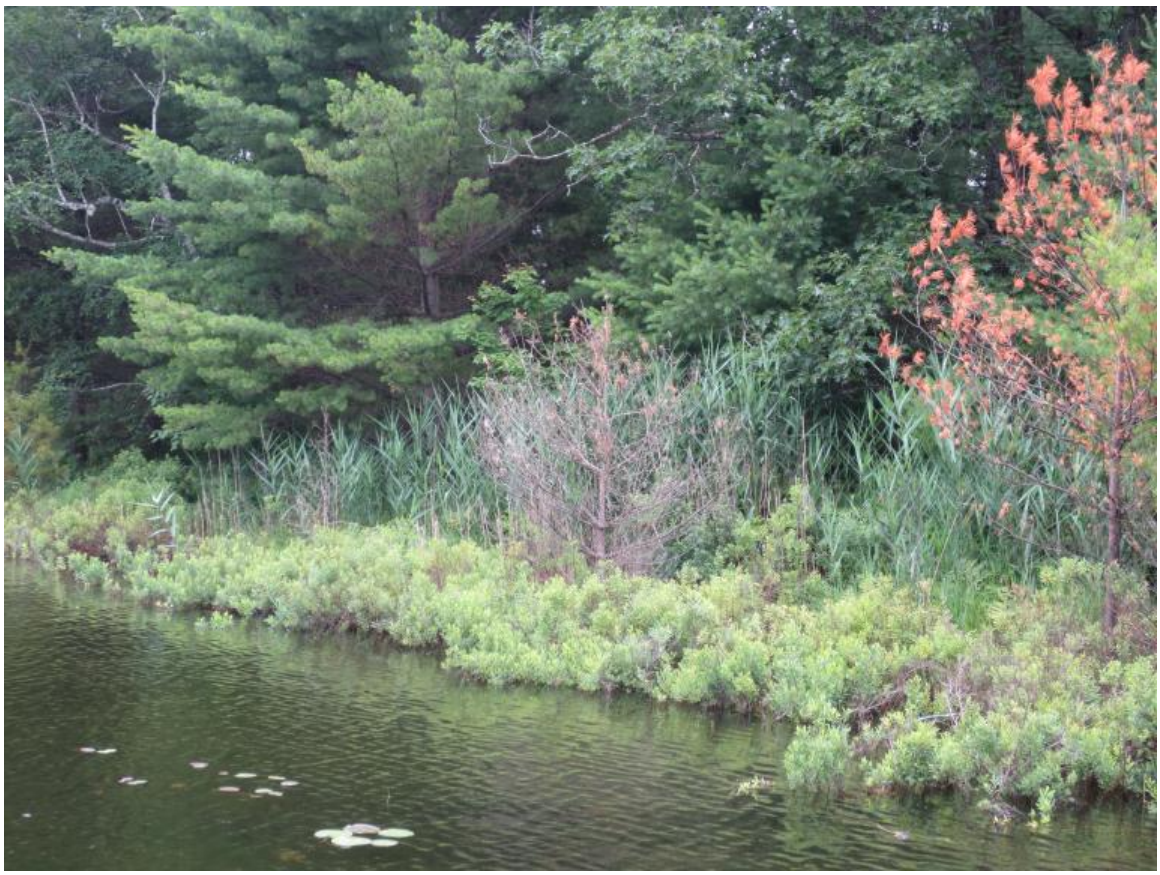
Crown Land

Latitude: 45°15'5.02"N
Longitude: 80° 8'27.20"W

Density Rating: 1
Size: 10x1 m

9. Sloan Island

Crown Land



Latitude: 45°15'4.15"N
Longitude: 80° 8'31.68"W

Density Rating: 5
Size: 15x5 m

10. McLaren Island (Large Patch)

Private Property

Latitude: 45°15'23.44"N
Longitude: 80° 8'25.01"W

Density Rating: 5
Size: 20x10 m

Note: This patch was cut for the first time in 2017.

11. Devil's Elbow Dump

Crown Land

Latitude: 45°15'36.55"N
Longitude: 80° 8'24.86"W

Density Rating: 1
Size: 3x1 m

12. Amanda Island

Private Property

Latitude: 45°14'14.06"N
Longitude: 80° 9'10.18"W

Density Rating: 1
Size: 12x2 m

Note: This patch was cut in 2015, 2016 and 2017 and is almost completely gone.

13. Peak Island (Outer)

Crown Land

Latitude: 45°13'45.70"N
Longitude: 80°10'50.32"W

Density Rating: 2
Size: 6x2 m

14. Peak Island (Inner)

Crown Land

Latitude: 45°14'17.10"N
Longitude: 80°10'43.89"W

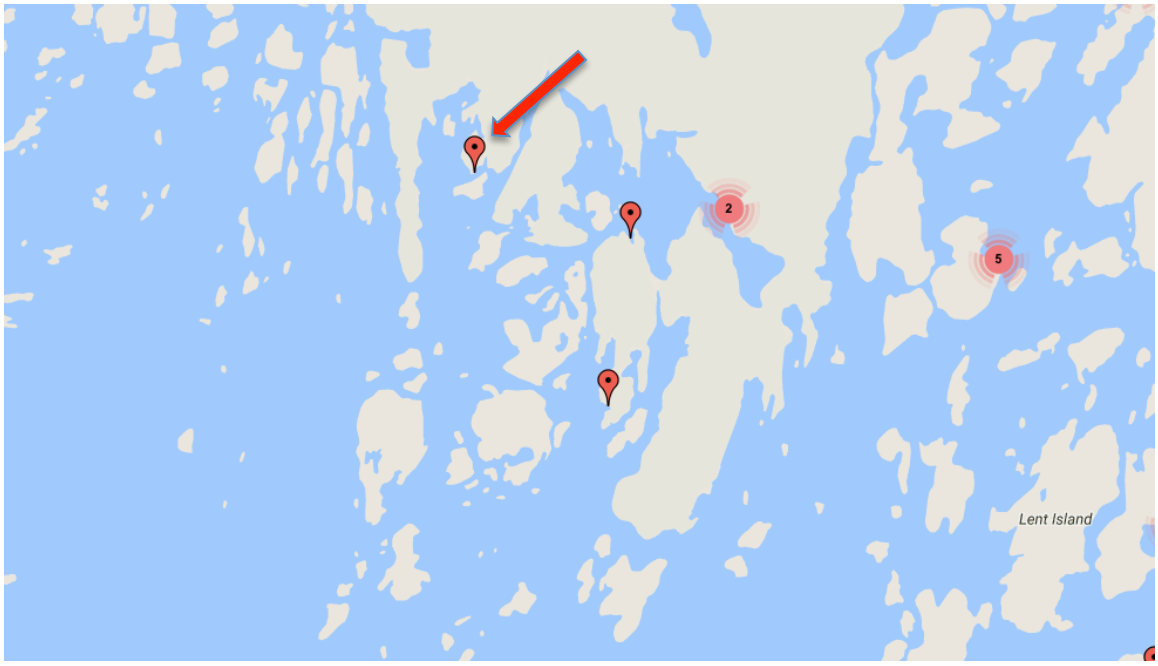
Density Rating: 1
Size: 2x2 m

15. Tranquility Island

Private Property

Latitude: 45°14'29.10"N
Longitude: 80°11'25.68"W

Density Rating: 3
Size: 10x6 m



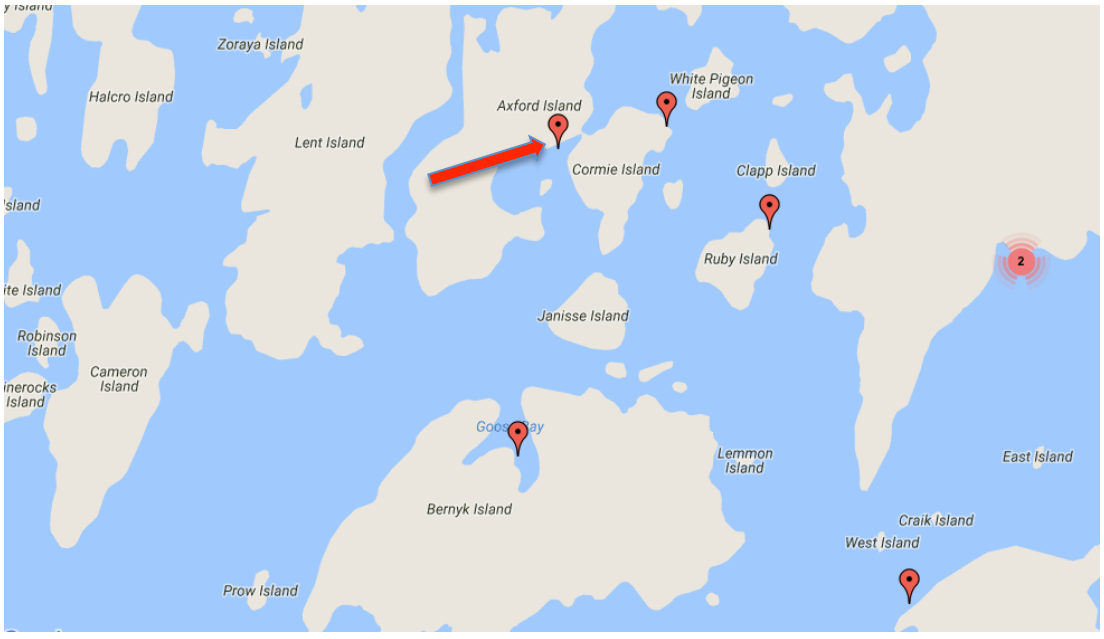
16. Cormie Island

Crown Land

Latitude: 45°13'24.20"N
Longitude: 80° 8'20.60"W

Density Rating: 4
Size: 6x3 m

Note: This patch was cut for the first time in 2017.



17. Ruby Island

Private Property

Latitude: 45°13'16.31"N
Longitude: 80° 7'51.78"W

Density Rating: 5
Size: 8x5 m

18. Bernyck Island

Crown Land

Latitude: 45°12'52.68"N
Longitude: 80° 8'24.64"W

Density Rating: 4
Size: 12x5 m

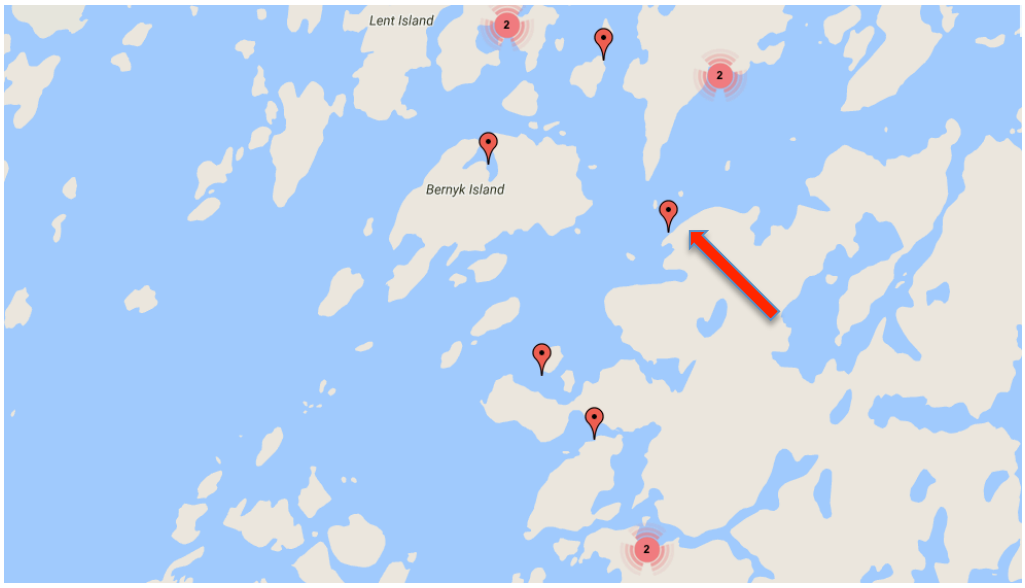
19. Hambly Point, Spider Bay

Private Property

Latitude: 45°12'39.81"N
Longitude: 80° 7'32.56"W

Density Rating: 5
Size: 11x6 m

Note: This patch has been cut in previous years and was more thoroughly cut in 2017.



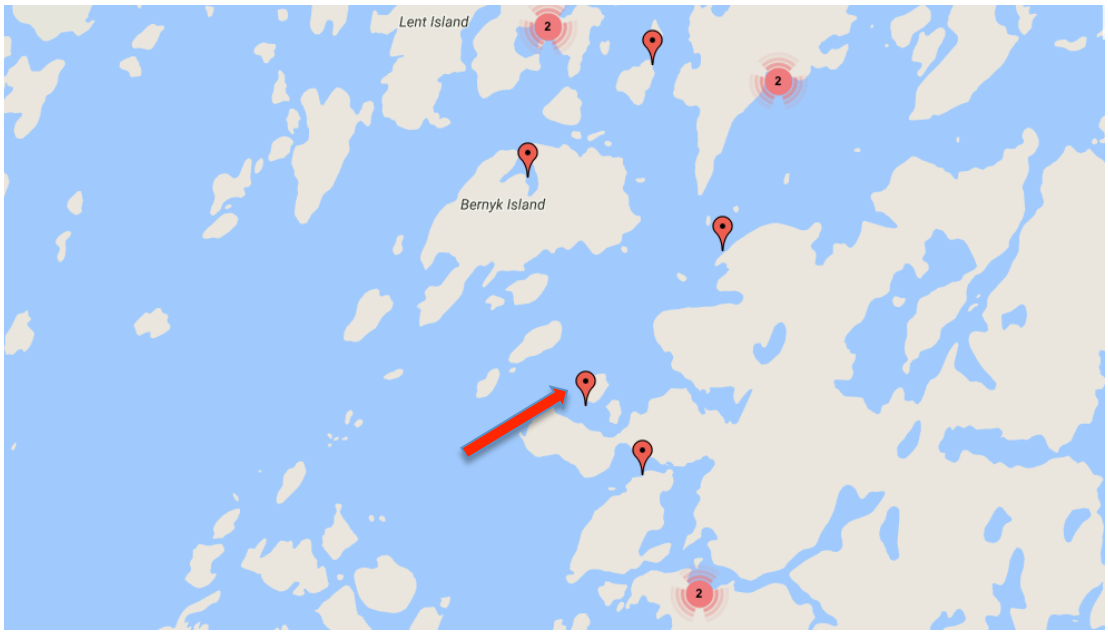
20. Blanchette Island

Private Property

Latitude: 45°12'9.73"N
Longtitude: 80° 8'10.15"W

Density Rating: 4
Size: 15x10 m

Note: This patch was cut for the first time in 2017.

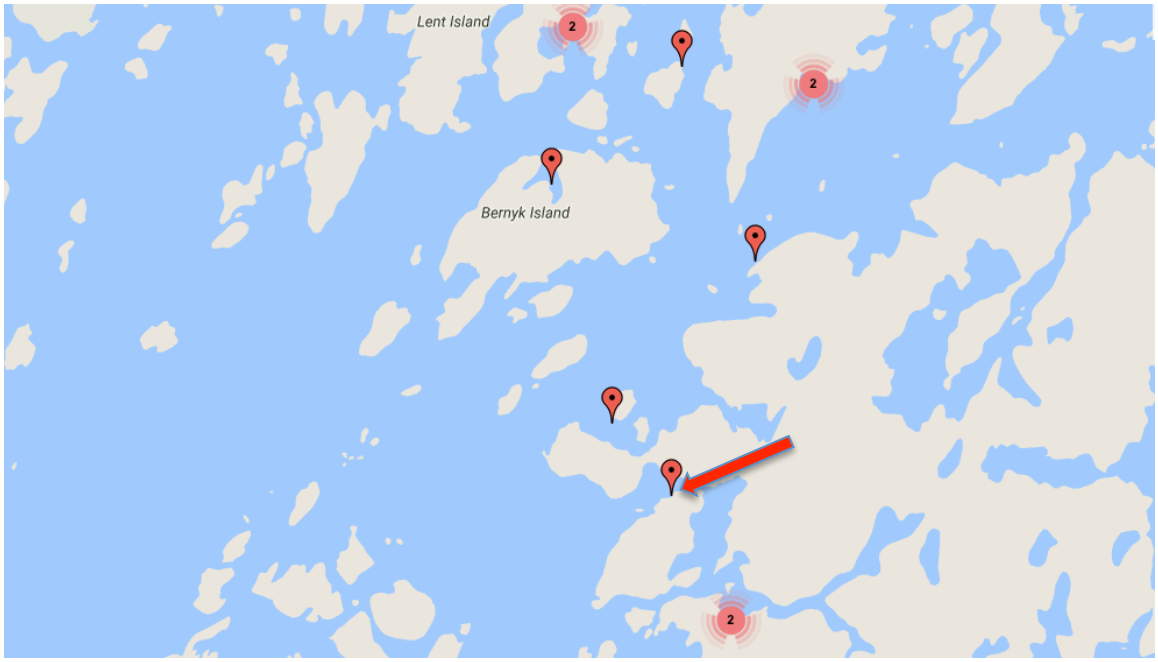


21. Echo Island

Private Property

Latitude: 45°11'56.34"N
Longitude: 80° 7'54.68"W

Density Rating: 3
Size: 5x3 m



22. Echo Bay

Massasauga Provincial Park

Latitude: 45°11'32.79"N
Longitude: 80° 7'38.79"W

Density Rating: 4
Size: 18x6 m

Notes: This patch was removed at the end of the 2017 season. Many stalks were cut just under the water's surface due to depth and the number of volunteers present.

23. Kinnear Island

Massasauga Provincial Park

Latitude: 45°11'25.47"N
Longitude: 80° 5'25.52"W

Density Rating: 5
Size: 18x8 m

24. Swimming Snake Bay

Massasauga Provincial Park

Latitude: 45°12'19.04"N
Longitude: 80° 4'43.73"W

Density Rating: 5
Size: 37x11 m

25. Sucker Creek Bay (Small)

Massasauga Provincial Park

Latitude: 45°11'58.73"N
Longitude: 80° 3'45.86"W

Density Rating: 1
Size: 1x1 m

26. Sucker Creek Bay (Large)

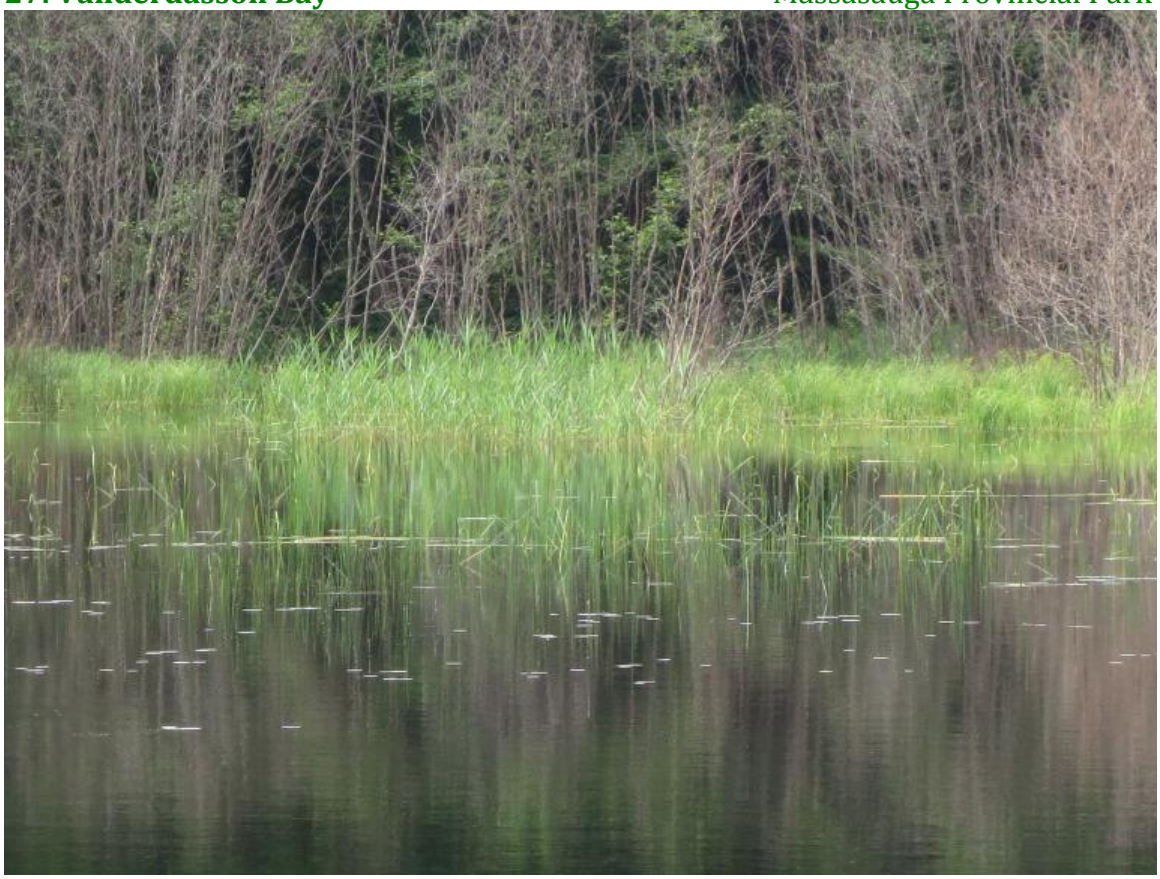
Massasauga Provincial Park

Latitude: 45°12'1.33"N
Longitude: 80° 3'38.38"W

Density Rating: 5
Size: 20x12 m

27. Vanderdasson Bay

Massasauga Provincial Park



Latitude: 45°11'8.24"N
Longitude: 80° 4'0.16"W

Density Rating: 3
Size: 6x3 m

28. Katerjan Island

Private Property

Latitude: 45° 9'50.20"N
Longitude: 80° 6'6.94"W

Density Rating: 5
Size: 6x3 m

29. Moon Island (Bowery Bay) Massasauga Provincial Park

Latitude: 45° 9'20.82"N
Longitude: 80° 5'9.51"W

Density Rating: 3
Size: 5x3 m

Notes: This patch is located near a small patch of native Phragmites (not pictured).

30. Shotgun Bay (Port Rawson Bay)

Massasauga Provincial Park

Latitude: 45°11'10.16"N
Longitude: 80° 2'4.45"W

Density Rating: 3
Size: 6x3 m

31. North of Miron Island

Massasauga Provincial Park

Latitude: 45°10'33.42"N
Longitude: 80° 1'45.30"W

Density Rating: 3
Size: 10x6 m

Notes: This patch was cut in 2015 and partially cut in 2016.

32. Moon Island (Across from Francis Island) Massasauga Provincial Park

Latitude: 45° 9'0.55"N
Longitude: 80° 1'45.08"W

Density Rating: 5
Size: 20x6 m

Notes: This patch was found and has been monitored by Heather Sargeant of the Georgian Bay Land Trust. The patch was cut by the community in 2016. Photo credit: Heather Sargeant

33. Moon Island (Near Island B46)

Massasauga Provincial Park

Latitude: 45° 7'52.09"N
Longitude: 80° 1'52.36"W

Density Rating: 5
Size: 25x10 m

34. B35

Massasauga Provincial Park

Latitude: 45° 7'30.60"N
Longitude: 80° 3'12.56"W

Density Rating: 5
Size: 15x6 m

35. B78 Private Property

Latitude: 45° 6'50.63"N
Longitude: 80° 4'3.56"W

Density Rating: 4
Size: 15x15 m

36. Loon Island (Near Portage)

Crown Land

Latitude: 45° 6'34.49"N
Longitude: 80° 4'31.81"W

Density Rating: 4
Size: 18x6 m

Photo credit: Heather Sargeant

Phragmites Removal Guide

Equipment:

- Clippers
- Twine
- Plastic bag(s)
- Gloves

1. Locate the Phragmites patch.

2. Find a stalk and use clippers to cut.

3. Run your clippers down to the base of the stalk.

4. Cut as low to the base as possible (there should be several root masses above ground).

5. Collect all seed heads.

6. Cut off seed heads and store in a bag.

7. Gather the cut stalks in bundles.

8. Use twine to tie bundles (tying can also be done out of water).

9. Wrap the twine around the bundle.

10. Tie a knot to secure the bundle.

11. Tie three loops of twine around the bundle to make it secure.

12. Pull the bundle out of the water (if assembly was done in the water).

11. Leave the bundle(s) to dry in an exposed area where it will not fall back into the water.