



# Invasive *Phragmites* Eradication for the Health of our Water and Wetlands

## 2022 Report





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## Authors

This report was prepared in 2022 by Georgian Bay Forever

- Nicole Carpenter, Science Projects Manager

## Acknowledgements

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GBF also wishes to acknowledge the support of these partners: The Ontario *Phragmites* Working Group, Severn Sound Environmental Association, Georgian Bay Biosphere, MTM Conservation Association, the Sans Souci and Copperhead Association, the Massasauga Provincial Park, Friends of The Massasauga Park, Georgian Bay Islands National Park, the Georgian Bay Association, Bluewater Marina, South Channel Association, Talpines Property Owner’s Association, the Woods Bay Association, Pointe au Baril Islanders' Association, Twelve Mile Bay Cottage Association, the Manitou Association, the Wah Wah Taysee Association, and the Bayfield-Nares Islanders' Association. Thank you to all groups working on *Phragmites* in Georgian Bay, including these known to us: Nottawasaga Valley Conservation Authority, Blue Mountain Watershed Trust, Georgian Bay Land Trust, and the Nature Conservancy.



## Executive Summary

Georgian Bay Forever (GBF) has been working to remove invasive *Phragmites* along the eastern shorelines of Georgian Bay, Lake Huron for the past 10 years. Wetland ecosystems are extremely important habitats for foraging, spawning, shelter and absorbing carbon from the atmosphere. Disturbances such as urban development, agricultural activities and the introduction of invasive species can be significant threats to these sensitive environments.

In 2019 an eradication plan was developed for each individual invasive *Phragmites* site along a large portion of the eastern shoreline of Georgian Bay. Individual site plans are crucial for successful eradication because each site differs in size, density, water depth and surrounding ecosystem characteristics. In this report you will see maps and tables developed for each region to display the current status of sites and progress over the years. In 2021 we explored an entirely new area of Georgian Bay to identify invasive *Phragmites* that we had presumed invaded and monitored species at risk (SAR) with the Severn Sound Environmental Association (SSEA) and MTM Conservation Association. Matchedash Bay, a provincially significant wetland, is one of the most highly biodiverse wetlands in Georgian Bay and is home to hundreds of migrating birds, mammals, amphibians, reptiles, species at risk and other organisms.

In 2022, GBF continued invasive *Phragmites* education, knowledge sharing, training and removal with communities throughout south-eastern Georgian Bay, developing and building new relationships.

### Reminder

Invasive *Phragmites* sites take 2-6 years of annual cutting to become nonviable (and in laymen's terms not visible) following which they are designated as monitoring/eradicated. The word '**eradicated**' that GBF uses is with the understanding that these sites do not need any further cutting and transition to a monitoring stage. This involves annually checking the site for a few years to verify the invasive *Phragmites* are gone. The word '**controlled**' refers to these sites that have been eradicated or are being monitored, as well as sites that have been treated using the cut to drown method. Left untreated, invasive *Phragmites* grow into dense monoculture stands, up to 18 ft. high, and spread rapidly threatening biodiversity, habitat, and enjoyment of the shoreline.





## Highlights

In 2019 GBF developed a 5-year plan to aim for 90% eradication of the original 588 stands mapped by 2025. Due to GBF's success, we have been able to relocate our time and efforts into new areas leading to the increase in number of stands/sites. As of 2022, we are seeing 53% eradication across the Township of the Archipelago, Township of Georgian Bay, Matchedash Bay and Tay Township shorelines to Georgian Bay with a plan of 90% eradication by 2025 for the original 588 stands identified in 2019. Since then, we have increased the total number of sites under our management plan and increased the area of which we are working in. With this plan, *Phragmites* growth could be reduced to a point of which we can expect coastal communities to be well equipped to manage any leftover stands and new stands that may appear.

- ❖ GBF staff, volunteers and communities mapped a total of 968 invasive *Phragmites* sites in the summer of 2022.
- ❖ 94 new stands identified due to an increase in mapping efforts.
- ❖ 514 sites of the 968, or 53%, are being monitored (i.e., eradicated or on their way toward eradication).
- ❖ 270, or 28% of sites were cut by GBF staff and volunteers.
- ❖ 784, or 81% of sites are under control (eradicated/monitored and cut) by GBF staff and volunteers.
- ❖ >150 volunteer hours dedicated.

Thank you to our 2022 Phragbusters Jared McNabb, Johnpaul Robson, Natalie Elliott, Ruby Hopkins, Simon Leonard, and Claire Hendriks for spending their summer removing invasive *Phragmites* from Georgian Bay, spreading awareness and educating the community.

### What does this report do?

This report highlights the results of work completed by Georgian Bay Forever in the 2022 field season to remove invasive *Phragmites*. If you have questions about the current report, please contact Science Projects Manager Nicole Carpenter at [Nicole.carpenter@gbf.org](mailto:Nicole.carpenter@gbf.org) or 905-880-4945 ext.7.





## Overview Table and Map

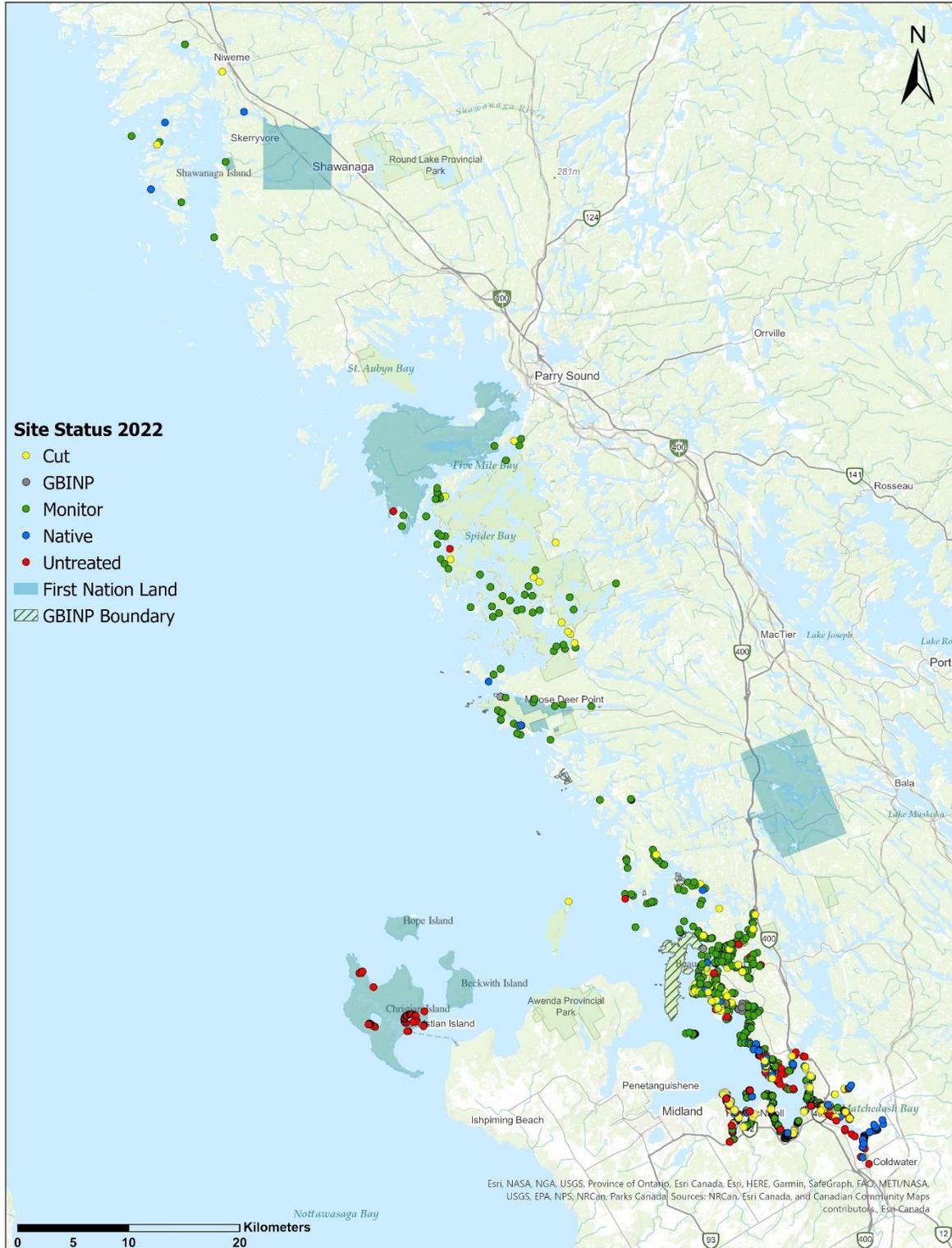
Table 1: Breakdown of invasive *Phragmites* sites by region in Georgian Bay in 2022.

Region	Total sites	New Sites	# of sites Eradicated/ Monitored	# of sites Cut	# of sites Controlled (Eradicated/ Monitored + Cut)	# of sites Untreated	% Eradicated/ Monitored	% Cut	% Control
Township of the Archipelago	69	2	54	7	61	8	78%	10%	88%
Township of Georgian Bay	514	18	334	115	449	65	65%	22%	87%
Tay Township	305	36	117	110	227	78	38%	36%	74%
Matchedash Bay	80	40	9	38	47	33	11%	48%	59%
<b>Overall Total</b>	<b>968</b>	<b>94</b>	<b>514</b>	<b>270</b>	<b>784</b>	<b>184</b>	<b>53%</b>	<b>28%</b>	<b>81%</b>





# Southeastern Georgian Bay Phragmites 2022





Follow the link to an interactive map of all stands on the eastern shoreline of Georgian Bay in:

2021 <https://arcg.is/4HaDa0>

2022 <https://arcg.is/0u0Kj>

## Introduction to invasive *Phragmites*

What is an invasive species?

Invasive species are non-native plants or animals that have been introduced to an ecosystem and have the ability to spread and disrupt the native wildlife. They are a threat to the environment and the broader economy. Non-native *Phragmites* are a significant threat to the Great Lakes along with many other invasive species.

### *Phragmites* in Georgian Bay

Georgian Bay, Lake Huron is home to some of Canada's most pristine coastal wetlands. Many organisms depend on these wetlands for life-sustaining activities such as foraging, spawning, shelter and more. *Phragmites* can be divided up into 2 lineages. The native subspecies, *Phragmites australis americanus*, and the invasive subspecies, *Phragmites australis australis*, which are both found in Georgian Bay. We acknowledge that invasive *Phragmites* is a reed grass that unwilfully travelled from Europe to Canada in the 1800s through human activity and has developed as a significant threat to Georgian Bay's coastal wetlands. In its natural environment, *Phragmites* does not pose any threat to other organisms and encounters 140 fellow creatures that live in balance with each other. Living in North America, the invasive lineage does not have any natural threats or predators which allows it to flourish in an unbalanced way by releasing toxins from its root system that disrupt the growth of neighbouring plants. Unfortunately, in the Great Lakes coastal ecosystems, invasive *Phragmites* grows quickly into extremely dense monocultures, outcompeting native vegetation and reducing biodiversity and habitat for native plants and animals. Furthermore, this impairs proper functioning of wetlands which are significant for their ability to enhance water quality, provide shelter and food for other relatives and sequester carbon helping to counter human caused Global Heating.

### Identification

Invasive *Phragmites* can be identified by their connecting root system of hollow rhizomes, beige stems and tall green stalks with alternating leaves. The stalks, if well-established, can grow up to 18 ft tall. Native *Phragmites* looks quite similar but does not grow as tall or dense and will co-exist amongst other native species. In late August, invasive *Phragmites* begin to develop large purple/reddish seed heads which eventually turn beige, unlike the native *Phragmites* that develop seeds earlier in the season. After seeds disperse in the fall, the stalks die and remain standing throughout the winter. Majority of native plants will fall under the weight of snow, breakdown, contribute nutrients back to the soil and allow space for new vegetation to grow come Spring. The remains of dried out stalks of invasive *Phragmites* prevent new growth of native plants in the Spring. During the summer, one can identify a stand of invasive *Phragmites* by the presence of leftover standing stalks and seeds from years previous. To find out more information on identification, visit our [website](#) or [contact us](#).



Figure 1: Comparison of invasive (left) and native (right) *Phragmites*.



## Control Methodology

GBF maps the eastern shoreline of Georgian Bay in June recording the location, size, density, and status of both recurring sites (from years previous) and new sites found. GBF continues to return to sites that have been mapped and cut in previous years in hopes not to see any regrowth. In this case, the stand is put into the monitoring/eradicated category and remains to be checked for years to come.

1. **Location:** We identify the locations in which invasive *Phragmites* is present and record using ESRI GIS mapping software (i.e., FieldMaps). We note the geographic coordinates, size, density and other notes to help come up with a management plan.
2. **Timing:** The optimal cutting season is Mid-July to mid-August before seed heads emerge. At this time, we are cutting the plant underwater when it is at its primary growth stage.
3. **Equipment and Cutting:** We use raspberry cane cutters, long-reach powered hedge trimmers and snippers to cut the *Phragmites* via the cut-to-drown method (i.e., cutting the stalks below the water level as close to the bottom as possible).
  - Cut each stalk underwater as close to the sediment as possible;
  - Do not disturb the roots as they are able to fragment and develop new shoots.
4. **Prioritize:** Priority is given to small stands first to ensure early control before the stand gets large and dense. It often takes a few years of cutting to completely get rid of a stand of *Phragmites* therefore we give priority to stands that have been cut previously. Each year, the stand should get smaller, more sparse and easier to tackle.
5. **Selective Cutting:** The selective cutting process means we only remove invasive *Phragmites* stalks, leaving native vegetation unharmed. If there are seed heads present, they are removed from the stalks and disposed of prior to cutting the plant.
6. **Clean-up:** We bundle the cut biomass and make sure we don't leave any viable pieces behind, specifically the roots.
7. **Disposal:** A designated spot near the stand is identified where the cut stalks can dry and decay. It is far enough from the waters edge that rising waters and storm waves will not pull the biomass back into the water. The disposal site is checked the following year to ensure there is no growth at the disposal site.
8. **Follow-up:** *Phragmites* is a perennial reed grass meaning it will grow back every year. If left untreated, it will grow back larger and more dense. If treated (cut), the stand will grow back smaller and more sparse, until eventually there is no regrowth. This can take 2-6 years of cutting activities depending on the size of the stand. Eventually native plants will return, and the habitat will be restored.

For more information or training on how to remove invasive *Phragmites* from shorelines in Georgian Bay, contact Science Projects Manager Nicole Carpenter at [nicole.carpenter@gbf.org](mailto:nicole.carpenter@gbf.org) or 905-880-4945 ext. 7.

Interested in volunteering? [Email here and let us know!](#)



## Breakdown by Area

### Tay Township

Table 2: Status of the 305 invasive *Phragmites* stands in Tay Township in 2022.

	Total sites	New Sites	# of sites Eradicated/ Monitored	# of sites Cut	# of sites Controlled (Eradicated/ Monitored + Cut)	# of sites Untreated	% Eradicated/ Monitored	% Cut	% Control
Tay Township	305	36	117	110	227	78	38%	36%	74%

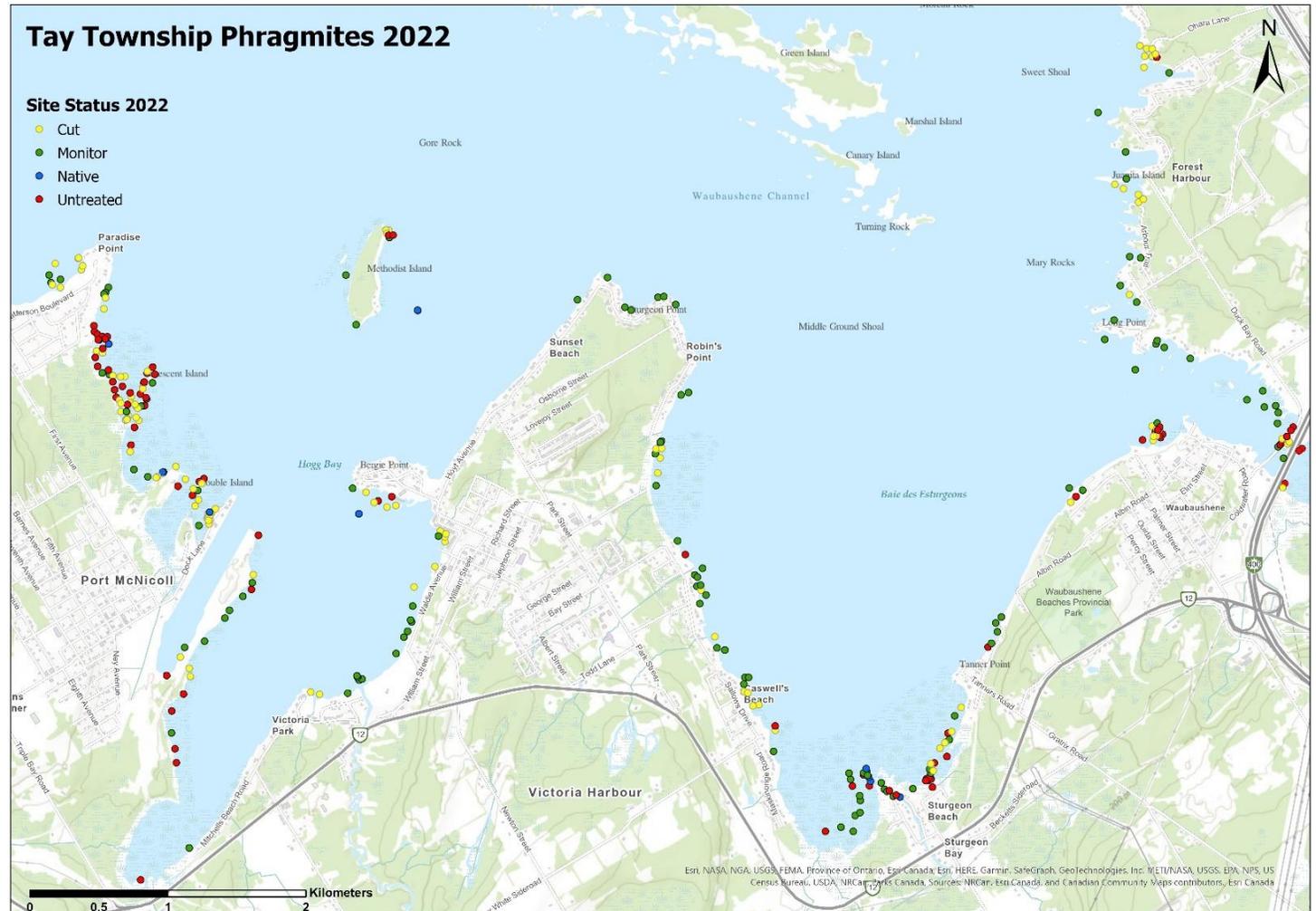


Figure 2: Map displaying the status and location of *Phragmites* in Tay Township in 2022.

In 2022, two local post-secondary students were hired to protect the shorelines of Tay through *Phragmites* removal activities, educating the public and hosting community cut events. GBF staff mapped a total of 305 sites across 30km of Tay Township’s shorelines on Georgian Bay of which 36 of these were new. 117 of the total sites were not visible to GBF staff, putting these sites in the eradicated or monitoring stage. In just two months, GBF summer staff and volunteers cut a total of 110 sites. When totalling the number of sites eradicated, monitoring and cut, we see an overall control of 74%, leaving 26% of sites untreated.

This year, GBF had trialed out our newly purchased, fully electric 20HP outboard motor. This motor was used by GBF to reduce our noise and carbon emissions while working on the water. The Torqeedo was installed in July and utilized until the boat was pulled out of the water in September. GBF’s Executive Director (David Sweetnam), Project Manager (Nicole Carpenter), summer students (Jared and Johnpaul) and local business owner Tom Fitzgerald ([BinCity](#)) spent many hours learning how to set up this motor to our tin boat. This had never been done before so was a learning curve for GBF, but the installation of batteries, battery chargers and the motor itself were a success! Part of the installation involved getting a custom-built aluminum toolbox to sit about 2/3 toward the bow to hold and protect the batteries, cables and battery chargers. This significantly reduced the space available in the boat, as well as adding weight. Thanks to Tom, we were able to get access to power down at the dock where the batteries can be charged overnight.



*Figure 3: The 20HP fully electric outboard motor, manufactured by Torqeedo.*

GBF is looking forward to deploying the Torqeedo again in 2023 and having a full season to test out its capabilities.



*Figure 4: Battery box including 2 batteries and battery chargers (right).*

**Community Cuts in Tay**

GBF staff hosted 2 community cuts in Tay of which 100 volunteer hours were dedicated.

1. Patterson Park Community Cut



*Figure 5: Before and After of the Patterson Park community cut.*



## 2. Waubaushene Dock/Beach

For the 2<sup>nd</sup> year in a row, GBF hosted a community cut at the Waubaushene Dock/Beach Area at the bottom of Pine Street. Community members from Tay and surrounding regions came to learn about *Phragmites* and participate in removal and disposal. Thanks to all the volunteers that came out to attend, as well as Councillor Norris! In 2023, we plan to host our 3<sup>rd</sup> cut here and predict the patches to be smaller and less dense.



Figure 6: GBF staff and volunteers at the Waubaushene Dock/beach area conducting a community cut.

### Calvert Park

Calvert Park received cutting treatment from truxors in 2020 but unfortunately did not have as much success as Delta Drive shorelines. Though some sites that grew back were smaller, the entire shoreline from Calvert Park south to Crescent Island has become overtaken by invasive *Phragmites* and is too large, dense and far spread for a couple staff members and/or volunteers to tackle. It is presumed that lower water levels, nutrient availability, soil content and other environmental factors had an impact on the success of the cut to drown method via truxors. A community cut was planned in coordination with GBF and Tay Township to recruit many volunteers to do some cutting at Calvert Park. Unfortunately, we were not able to recruit enough volunteers and the event was cancelled due to a severe weather warning. Some cutting was conducted at a later date by our Phragbusters. In 2022, we learned that a large portion of the wetland south of Calvert Park is privately owned, including a water lot. This poses some barriers to GBF removing invasive *Phragmites* from these wetlands and we are doing everything we can to deal with this challenge.

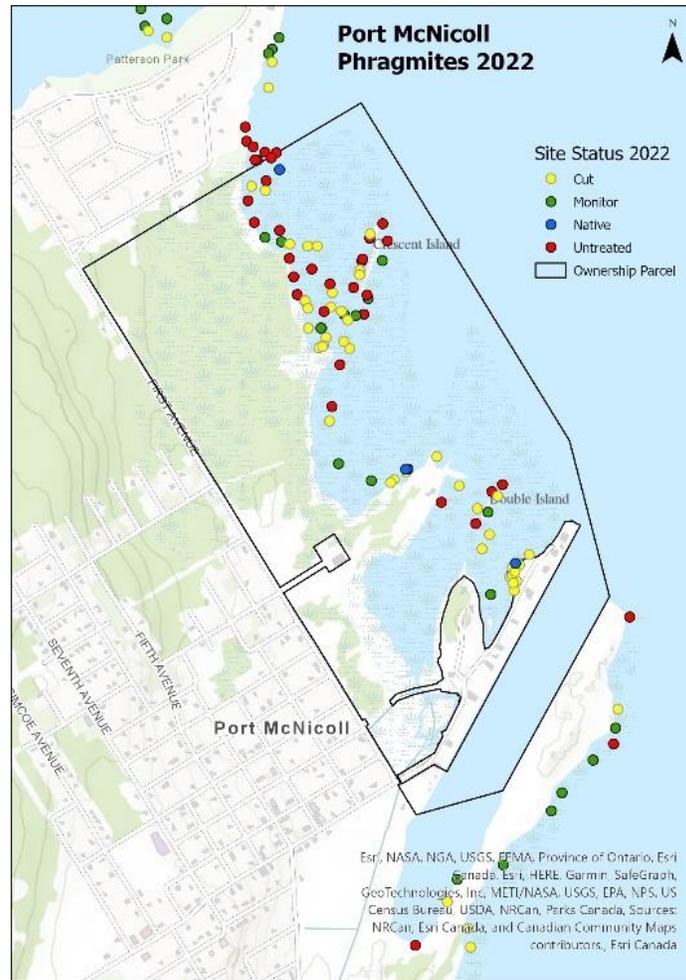


Figure 7: Map of the location and status of Phragmites in relation to the privately owned water lot south of Calvert Park in Port McNicoll, Tay Township.

**Forest Harbour Cut**

One of the largest sites in Tay Township is found in a small bay within Forest Harbour near a few cottages. Due to the location and inaccessibility for members of the public, we did not host a community cut. Instead, 5 GBF staff members worked for 3 days straight with the help of a local cottage owner and Bin City to remove this stand. Over 1600 kg of *Phragmites* was removed. Below is a photo of the stand in 2021.





Figure 8: Before and After of the Forest Harbour cut in 2022.

### Matchedash Bay

In 1996, Matchedash Bay Provincial Wildlife Area was designated a Ramsar Site, defining it as a Wetland of International Importance for the conservation and wise use of wetlands and their resources (<https://www.ramsar.org>). The marshes of Matchedash Bay are the largest and most diverse on Georgian Bay, Lake Huron. 2022 marked the second year GBF worked in Matchedash Bay and its tributaries in search of SARs and invasive *Phragmites*. With funding support from Habitat Stewardship Protection (HSP) and the Eastern Georgian Bay Initiative (EGBI as managed by Ganawenim Meshkiki) and partnerships built with the Severn Sound Environmental Association (SSEA) and MTM Conservation Association, GBF mapped a total of 80 invasive *Phragmites* sites throughout the main Bay proper, the tributaries and surrounding marshes. In 2021, GBF faced many challenges tackling invasive *Phragmites* due to the inaccessibility of many sites and uncertainty when identifying sites as native or invasive. Many of the sites are located amongst vast stretches of cattail marshes that are too dense for a boat to reach, and water too deep for staff to walk to. To help combat these challenges, GBF acquired a canoe to help in the accessibility of sites. Thanks to the friendly staff at Swift Canoe and Kayak in Waubaushene, we were able to use their location at the mouth of the Bay to launch our canoe all summer. In addition, 2 summer students were hired and dedicated to the Matchedash Bay wetland area which increased our time spent exploring the Bay, allowing us to investigate more remote areas and increase our overall control.



Figure 9: Nicole testing out the new canoe in Matchedash Bay!

Table 3: Status of the 80 invasive *Phragmites* stands in Matchedash Bay in 2022.

	Total sites	New Sites	# of sites Eradicated/ Monitored	# of sites Cut	# of sites Controlled (Eradicated/ Monitored + Cut)	# of sites Untreated	% Eradicated/ Monitored	% Cut	% Control
Matchedash Bay	80	40	9	38	47	33	11%	48%	59%

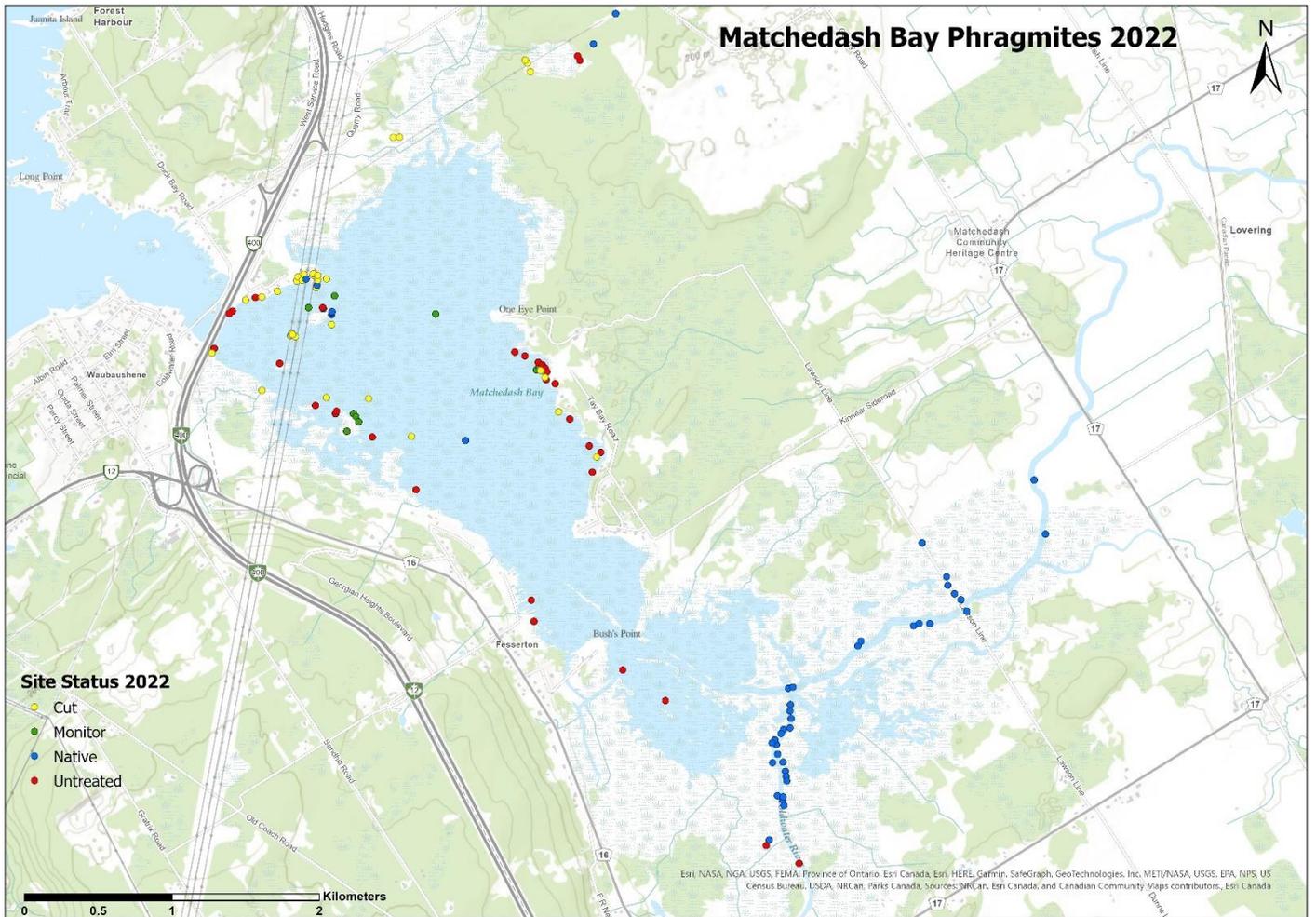


Figure 10: Map displaying the status and location of Phragmites in Matchedash Bay in 2022.



Figure 11: GBF Summer students removing invasive Phragmites in the cattail marshes of Matchedash Bay.



**Community Cuts**

In August 2022, GBF worked with MTM Conservation Association to cut 3 sites found in the Beaver Pond, also known as Heron Pond, accessible only by foot off of Quarry Road for the 2<sup>nd</sup> year in a row. These sites are not too dense but could become a large threat if left untreated. When we returned this year, the sites appeared to have decreased in size slightly, but more attention will be needed in 2023. We noticed the water levels in the pond were low, leaving only some growth submerged, while most was on the muddy shores. Being that this pond was developed by Ducks Unlimited (DU) and has a dam structure, GBF reached out to DU for further insight into the water levels here. Lower water levels can impact the efficacy of our cut to drown treatment method. GBF and SSEA staff both noticed some possible work done around the control structure (i.e., clearing out logs) and suspected it could be related to the lower water levels. DU advised us that the water control structure was not used to lower the water levels in 2022, and this drop in water levels was seen in wetlands across the province.



*Figure 12: GBF staff and MTM Conservation Association volunteers.*



Township of Georgian Bay

*Table 4: Breakdown of the Township of Georgian Bay invasive Phragmites sites by region.*

Region	Total sites	New Sites	# of sites Eradicated/ Monitored	# of sites Cut	# of sites Controlled (Eradicated/ Monitored + Cut)	# of sites Untreated	% Eradicated/ Monitored	% Cut	% Control
Wah Wah/ 12 Mile/Go Home	17	0	15	0	15	2	100%	0%	100%
Cognashene	32	0	28	3	31	1	88%	10%	98%
Honey Harbour	215	3	170	39	209	6	79%	18%	97%
Present Island	9	0	9	0	9	0	100%	0%	100%
Quarry Island	44	8	10	28	38	6	23%	64%	87%
Wolverine Beach/ Macey's Bay	60	0	52	7	59	1	87%	12%	99%
Severn Sound/Port Severn	137	7	50	38	88	49	36%	28%	64%
<b>TOTAL</b>	<b>514</b>	<b>18</b>	<b>334</b>	<b>115</b>	<b>449</b>	<b>65</b>	<b>65%</b>	<b>22%</b>	<b>87%</b>

For the purposes of this report, the Township of Georgian Bay has been broken down into 7 regions or communities: Wah Wah Taysee, 12 Mile Bay and Go Home Bay, Cognashene, Honey Harbour, Quarry Island, Present Island, Wolverine Beach to Macey's Bay and Severn Sound to Port Severn. A total of 514 invasive *Phragmites* stands were mapped along these 7 regions and by the end of the 2022 season, GBF and community volunteers had nearly 87% of the Township of Georgian Bay under control. With this success, more focus can be put on providing that 13% with treatment. This year, GBF Phragbusters and volunteers cut 115 sites, put 336 in the monitoring/eradicated stage and found 18 new sites across the Township of Georgian Bay. GBF received generous support from the Honey Harbour Association, Cognashene Cottager's Association and other dedicated community groups and individual volunteers!

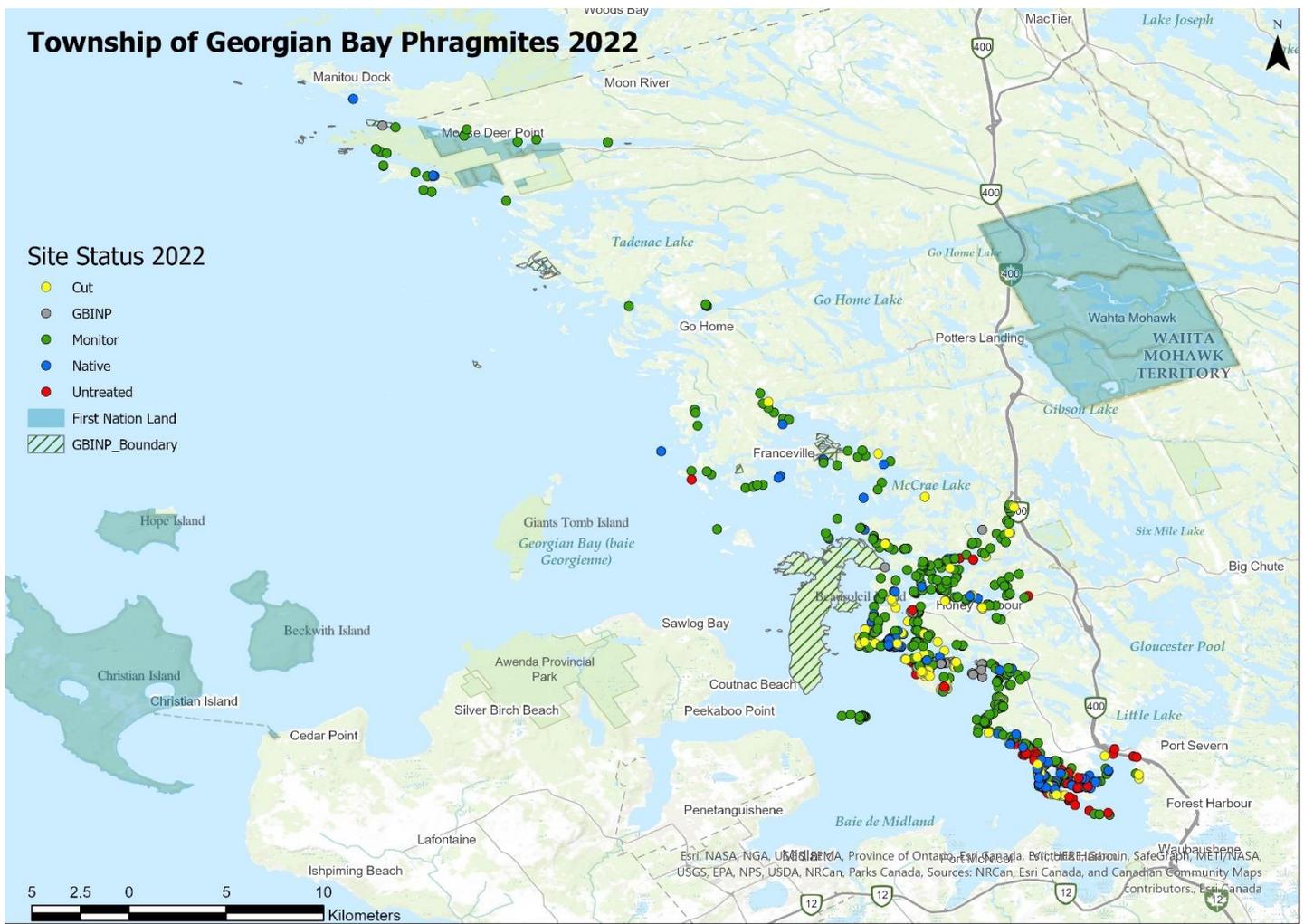


Figure 13: Map displaying the status and location of Phragmites in the Township of Georgian Bay in 2022.

Wah Wah Taysee/12 Mile Bay and Go Home Bay

Table 5: Status of the 21 sites in Wah Wah Taysee, 12 Mile Bay and Go Home Bay.

	Total sites	New Sites	# of sites Eradicated/ Monitored	# of sites Cut	# of sites Controlled (Eradicated/ Monitored + Cut)	# of sites Untreated	% Eradicated/ Monitored	% Cut	% Control
<b>Wah Wah/ 12 Mile/Go Home</b>	17	0	15	0	15	2	88%	0%	88%

17 sites were monitored in Wah Wah Taysee, 12-mile Bay and Go Home Bay by dedicated community members this year. We were unable to get to Wah Wah Taysee ourselves, thus in the fall of 2022, GBF met with a member of the Wah Wah Taysee Association who advised us of 2 previously treated sites in the area that may have potential growth and will need to be checked in 2023. Thank you, Janet! Thank you to Ray Boots, a dedicated volunteer on 12 Mile Bay, that monitors this area each year and reports back to GBF. Since there is little to no growth in these areas, it is very important to continue monitoring next year to ensure 100% control.

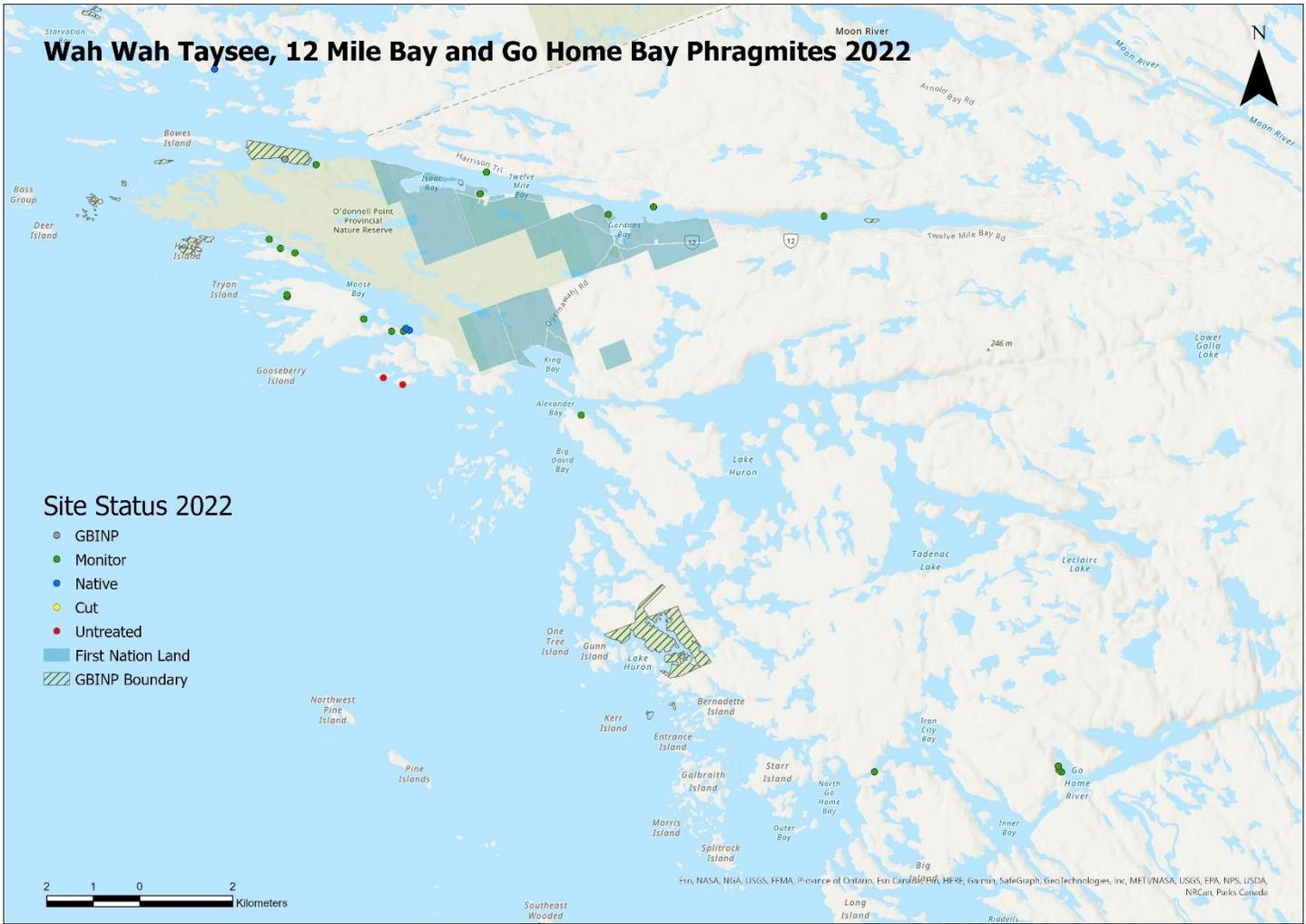


Figure 14: Map displaying the status and location of Phragmites in Wah Wah Taysee, 12 Mile Bay and Go Home Bay in 2022.

Cognashene

Table 6: Status of the 32 invasive Phragmites sites in Cognashene.

	Total sites	New Sites	# of sites Eradicated/ Monitored	# of sites Cut	# of sites Controlled (Eradicated/ Monitored + Cut)	# of sites Untreated	% Eradicated/ Monitored	% Cut	% Control
<b>Cognashene</b>	32	0	28	3	31	1	88%	10%	98%

Cognashene received 98% control, cutting 3 sites and leaving 1 site untreated. This site was on land on private property and the property owner is aware of the site and will be controlling it on their own. 28 sites are in the monitoring/eradicated stage, which is 1 more than last year. It will be important to continue to monitor Cognashene next year and control small stands, if any, to prevent further growth or spread. Thank you to the Cognashene Cottage Association for their continued support in this program. Cognashene is a great success story!

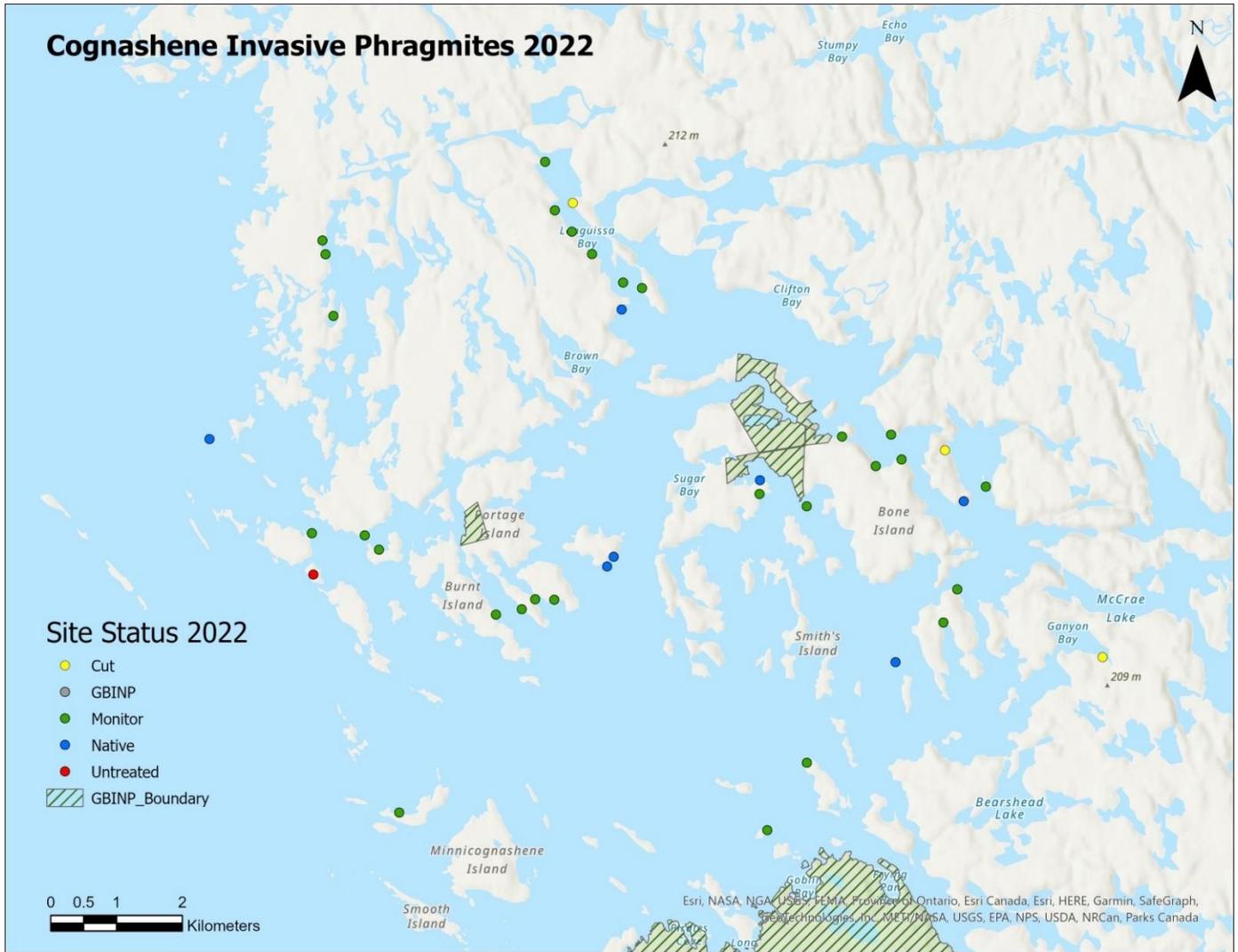


Figure 15: Map displaying the status and location of Phragmites in Cognashene in 2022.

## Honey Harbour

Table 7: Status of the 215 invasive Phragmites sites in Honey Harbour.

	Total sites	New Sites	# of sites Eradicated/ Monitored	# of sites Cut	# of sites Controlled (Eradicated/ Monitored + Cut)	# of sites Untreated	% Eradicated/ Monitored	% Cut	% Control
<b>Honey Harbour</b>	215	3	170	39	209	6	79%	18%	97%

Honey Harbour has 215 sites that have been mapped and managed over the years. Similar to Cognashene, Honey Harbour resembles a success story of hundreds of hours from GBF staff and community volunteers to eradicate *Phragmites*. 79% of the sites are in the monitoring/eradicated stage, compared to 62% in 2021. GBF staff and volunteers cut 39 sites throughout Honey Harbour and left only 6 untreated. We are decreasing the number of sites needing treatment and increasing the sites we are monitoring for 0 regrowth. The sites left untreated were again due to inaccessibility from construction work and water levels too low for the Baykeeper to reach. In 2023, GBF is committed to our plans and efforts in Honey Harbour and will continue our work in order to bring this area closer to our goal of 90% eradication by 2025. Thank you to the Honey Harbour Association for their continued support in this program!

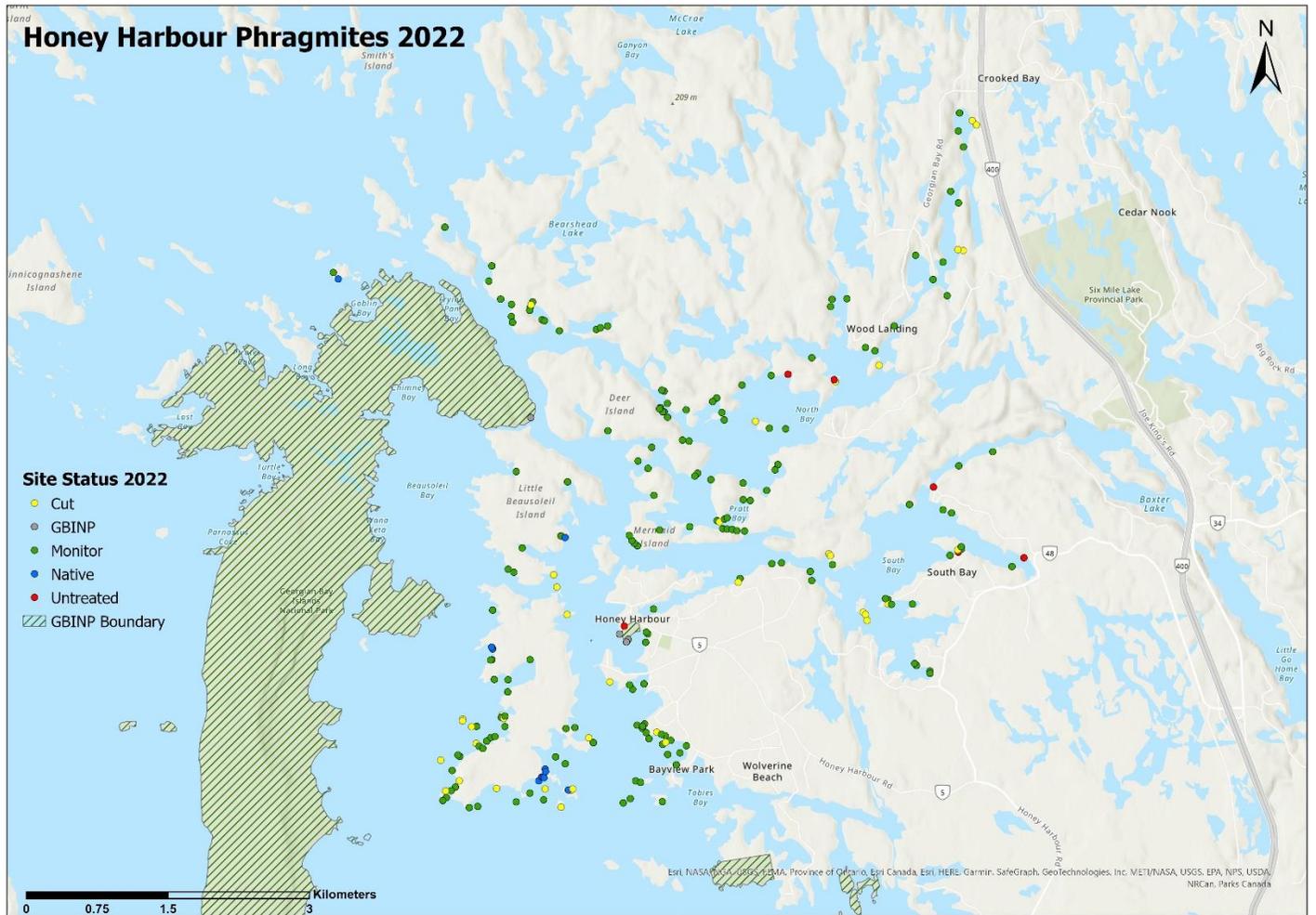


Figure 16: Map displaying the status and location of Phragmites in Honey Harbour in 2022.

Present Island

Table 8: Status of all 9 invasive Phragmites sites on Present Island.

	Total sites	New Sites	# of sites Eradicated/ Monitored	# of sites Cut	# of sites Controlled (Eradicated/ Monitored + Cut)	# of sites Untreated	% Eradicated/ Monitored	% Cut	% Control
<b>Present Island</b>	9	0	9	0	9	0	100%	0%	100%

Present Island has 9 sites that we did not see any regrowth for the third year in a row. GBF will continue to monitor Present Island in 2023 to ensure there is no new establishment of invasive *Phragmites*.

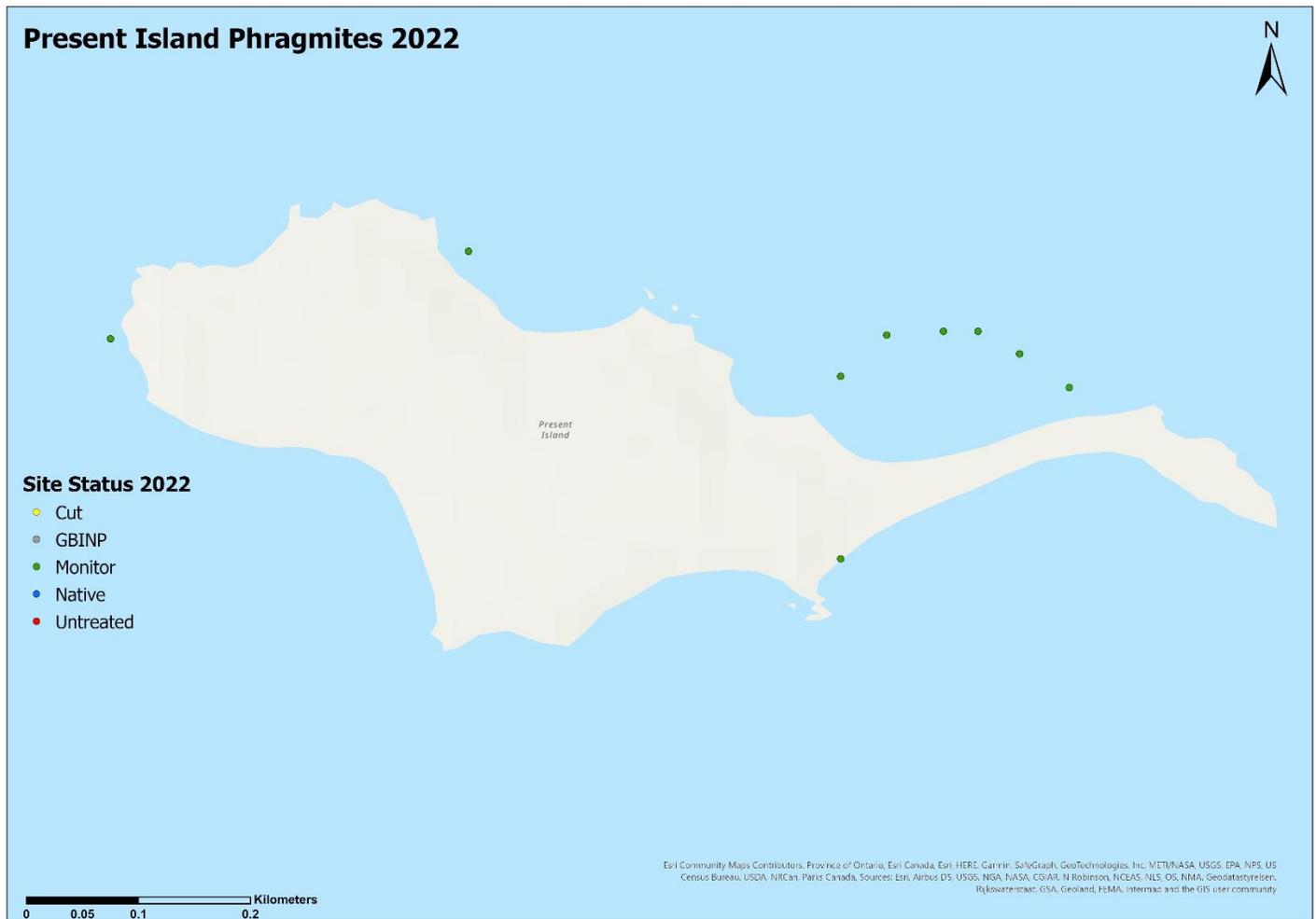


Figure 17: Map displaying the status and location of Phragmites around Present Island in 2022.

Quarry Island

Table 9: Status of the 44 invasive Phragmites sites on Quarry Island.

	Total sites	New Sites	# of sites Eradicated/ Monitored	# of sites Cut	# of sites Controlled (Eradicated/ Monitored + Cut)	# of sites Untreated	% Eradicated/ Monitored	% Cut	% Control
<b>Quarry Island</b>	44	8	10	28	38	6	23%	64%	87%

In July of 2022, truxors were brought to the northeast shoreline of Quarry Island to remove some of the invasive *Phragmites* that have begun to completely take over the coastline rapidly. This was the 2<sup>nd</sup> year in a row in which we contracted the Invasive *Phragmites* Control Center (IPCC) to remove multiple extremely large, dense patches.

**Quarry Island Community Cut**

GBF staff, NCC staff and local volunteers spent an entire day around Quarry Island cutting 4 large stands in August. GBF hosted a community cut at Quarry Island that brought volunteers from the local area to engage in cutting activities and learn more about invasive *Phragmites* management. Staff from the Nature Conservancy of Canada also joined to help!

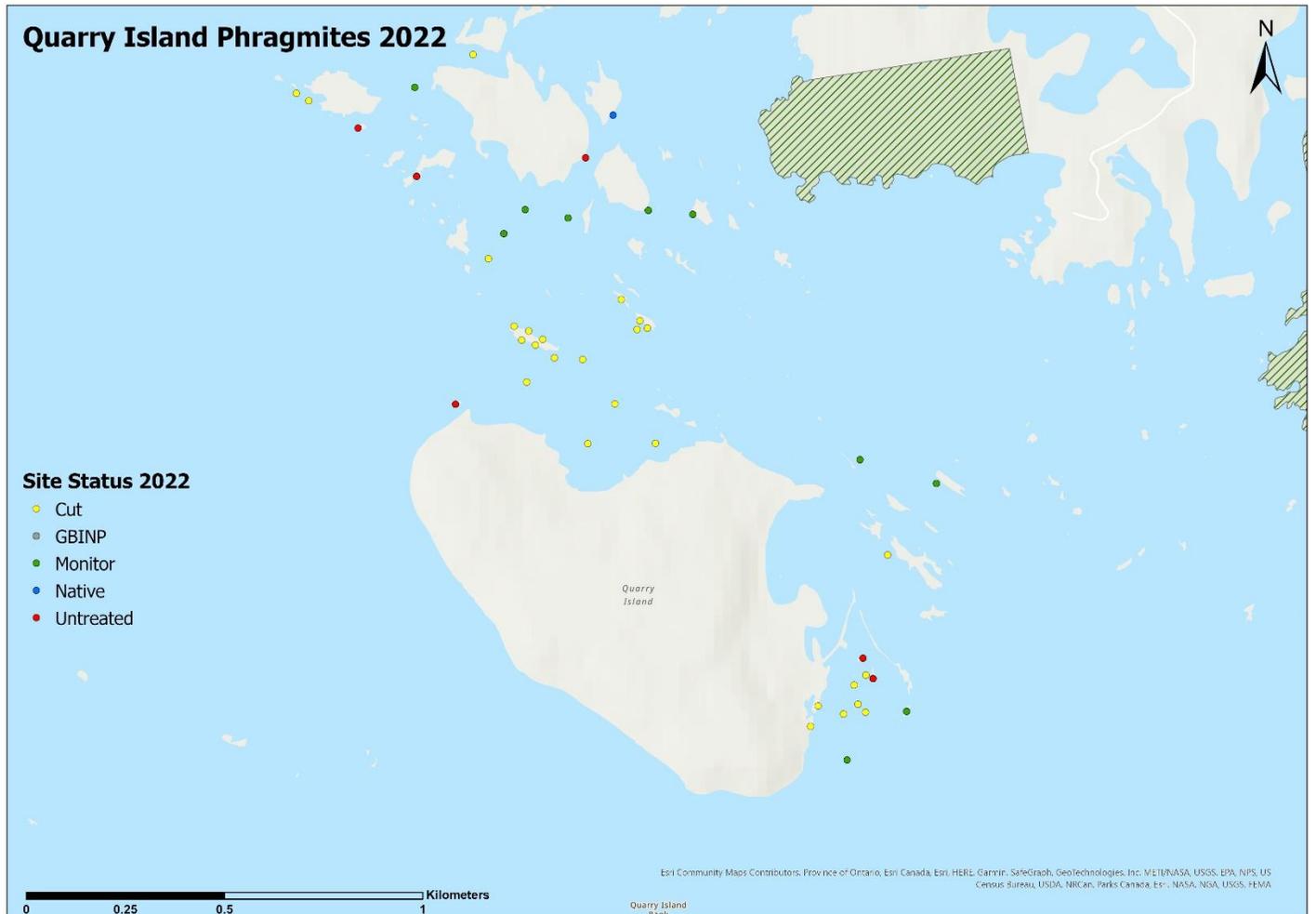


Figure 18: Map displaying the status and location of Phragmites around Quarry Island in 2022.



Figure 19: IPCC Truxor carrying cut biomass to shore.



Figure 20: Before (left) and after (right) of a large, dense site off the coast of Quarry Island cut by IPCC truxors.

Wolverine Beach to Macey’s Bay

Table 10: Status of the 60 sites along Wolverine Beach and Macey’s Bay.

	Total sites	New Sites	# of sites Eradicated/ Monitored	# of sites Cut	# of sites Controlled (Eradicated/ Monitored + Cut)	# of sites Untreated	% Eradicated/ Monitored	% Cut	% Control
<b>Wolverine Beach/ Macey's Bay</b>	60	0	52	7	59	1	87%	12%	99%

The coastline from Wolverine Beach south to Macey’s Bay is currently at 97% control and 87% is eradicated. A huge jump from 2021! Only 7 sites, or 12%, were cut this year with one left untreated as it was found on private property. In this region, there are some sites found on Georgian Bay Islands National Park (GBINP) land represented by the grey points. Some of these sites were found to be native *Phragmites* and were managed by Parks Canada and GBF. See page 30 for an update on GBINP invasive *Phragmites* management and control.



Figure 21: GBF summer student safely navigating the waters around Macey's Bay.

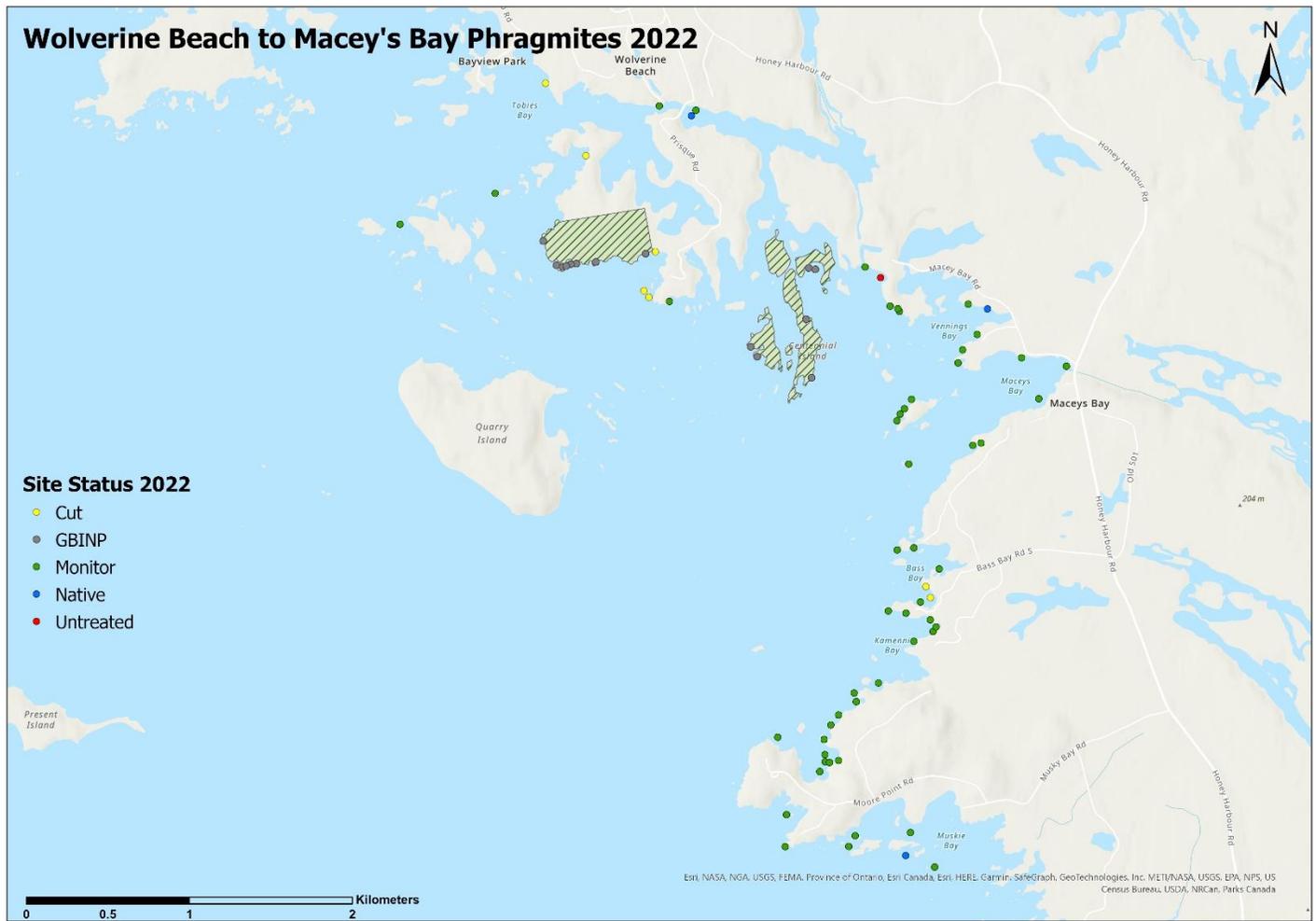


Figure 22: Map displaying the status and location of Phragmites off the coast of Wolverine Beach and Macey's Bay in 2022.

Severn Sound/Port Severn

Table 11: Status of the 60 sites along Severn Sound and Port Severn in 2022.

	Total sites	New Sites	# of sites Eradicated/ Monitored	# of sites Cut	# of sites Controlled (Eradicated/ Monitored + Cut)	# of sites Untreated	% Eradicated/ Monitored	% Cut	% Control
<b>Severn Sound/Port Severn</b>	137	7	50	38	88	49	36%	28%	64%

Starting in 2020, Severn Sound gained more attention due to the success GBF has had in other regions of Georgian Bay Township. In 2022, GBF staff and volunteers were able to control 64% of sites in Severn Sound. Only 7 new sites were mapped, compared to the 50+ in 2021, putting us at a total of 137 invasive *Phragmites* stands in the Port Severn to Severn Sound area. A large majority of these sites were found on the southwest side of Green Island growing amongst vast cattail wetlands. Truxors were barged from Quarry Island down to Green Island in July for a day of cutting.

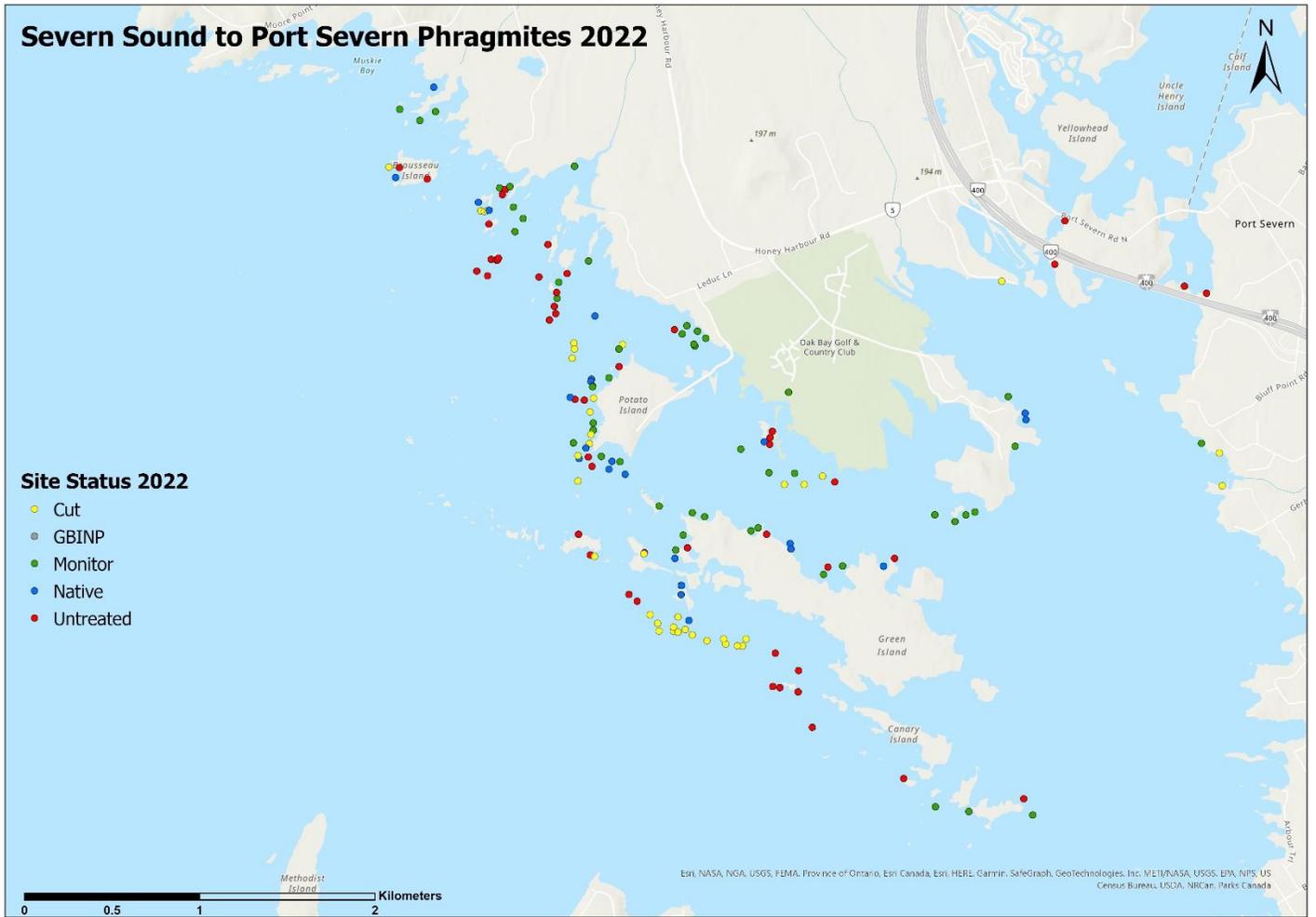


Figure 23: Map displaying the status and location of Phragmites in Severn Sound and Port Severn in 2022.



Figure 24: Before (left) and after (right) of an invasive Phragmites site removed by IPCC truxors around Green Island.



*Figure 25: Aerial imagery taken from an IPCC drone before removal at Green Island.*



*Figure 26: Aerial imagery taken from an IPCC drone after removal by truxors at Green Island.*



Township of the Archipelago

**Table 12:** Status of all 67 sites in the Township of the Archipelago, including Massasauga Provincial Park in 2022.

	Total sites	New Sites	# of sites Eradicated/ Monitored	# of sites Cut	# of sites Controlled (Eradicated/ Monitored + Cut)	# of sites Untreated	% Eradicated/ Monitored	% Cut	% Control
<b>ToA</b>	69	2	54	7	61	8	78%	10%	88%

In 2022, the Township of the Archipelago (ToA) received 88% control on the 69 sites mapped. This is slightly less than the control in 2021 due to volunteer constraints and limited resources from Ontario Parks. In the past, Massasauga Provincial Park had summer staff managing invasive *Phragmites* in the park, but not in 2022. Fortunately, they do have plans to tackle all sites in 2023. There are approximately 29 sites in the Park, with only about 5 in need of further control. Some sites around the park are also monitored by community members, such as Katherine Denune, who has been successfully monitoring sites throughout Sans Souci and Copperhead. Peter Adams and team have been monitoring and controlling invasive *Phragmites* along the South Channel for many years as well. Thank you to Katherine, Peter and all other community members for monitoring over 24 sites over the years and cutting them when needed. In 2022, a few sites in Wood’s Bay were left untreated due to limited time and resources, but it was reported by Heather Sargeant that sites eradicated in 2021 remained eradicated in 2022. GBF will work with these community groups in 2023 to provide any additional resources needed to ensure all sites in need of treatment get cut. Thank you, Katherine, Peter, Heather and all other volunteers for your hard work and dedication that has made control in the Archipelago so successful!



**Figure 27:** Township of the Archipelago shoreline to Georgian Bay.



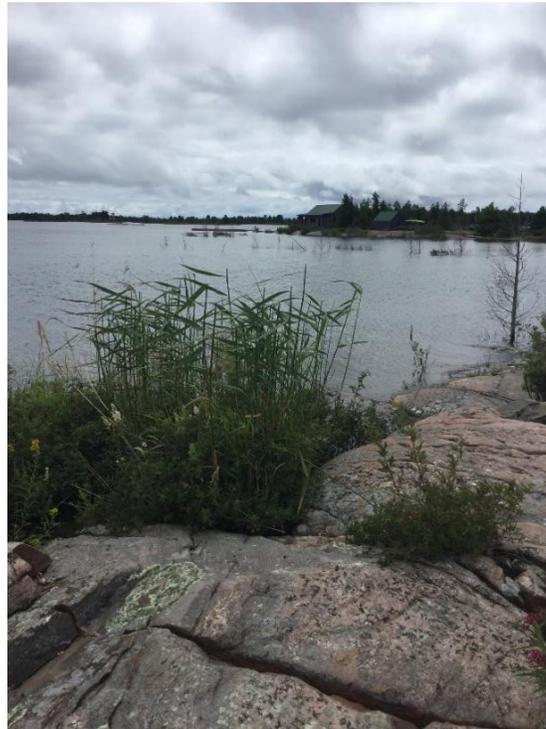


Pointe au Baril and Shawanaga First Nation

GBF joined Pointe au Baril’s Marine Patrol in July to conduct an invasive *Phragmites* training workshop with new Marine Patrol students (Emma and Roland) covering ID, proper removal, and disposal practises. Members from Shawanaga First Nation’s (SFN) Lands Department also joined for the educational workshop. GBF joined the Marine Patrol and SFN out on the water to investigate a few sites and visualize the native lineage of *Phragmites*. Shawanaga First Nation has some terrestrial growth of invasive *Phragmites* and was able to carry out some removal in 2022.

*“Throughout the duration of the summer, a total of 13 stands were monitored for the invasive phragmites species. Previous aquatic growth sites did not have invasive phragmites present. However, both terrestrial sites under observation had phragmites stalks. Both Desmasdons and Ojibway staff were informed of the continued growth at the phragmites locations. Both parties were informed of the protocols for cutting, with plans of assisting staff in cutting and properly disposing of the cut biomass. Cutting took place on the 20<sup>th</sup> of August. This summer there were no stands present in the Pointe au Baril area that would necessitate a large group of volunteers. The presence of native phragmites was recorded at many of the sites monitored. Locations including Cambria Island, Hotdog Stand, Frederic Inlet, Bonnie Isle, Upper Shawanaga, and Chicken Channel did not have invasive stalks growing, and native phragmites were documented.” – Emma Manners, Roland Binkley and Cath Fairlie (PaBla Marine Patrol Report 2022 Overview)*

The Pointe au Baril sites are included in our total Township of the Archipelago count.



*Figure 29: GBF training PaBla Marine Patrol and Shawanaga First Nation on the difference between native (right) and invasive Phragmites. Photo credit to Emma Manners.*

Massasauga Provincial Park

The majority of the sites in Massasauga Provincial Park have been previously controlled and there has been very little regrowth in the past. This season, the park did not receive funding to hire summer staff that usually take over management. Cutting was limited, but staff did do some mapping and monitoring with plans to carry out control in 2023. The Massasauga Provincial Park sites are included in our total Township of the Archipelago count.



## Collaborative

Georgian Bay Islands National Park (GBINP) – Beausoleil Island

Georgian Bay Islands National Park launched the Impede the Reed project in 2019 to tackle the invasive plant, *Phragmites*. This project, funded through the Parks Canada Conservation and Restoration Fund, is focused primarily on Beausoleil Island. Park staff completed annual mapping of *Phragmites* populations, physical removal of *Phragmites* stalks and educating park visitors about the management and prevention of invasive species. During the summer months Park staff focused removal efforts on smaller, more manageable stands that could be controlled by hand tools and trimmers. In August, the Park met up with GBF around some of the smaller islands, such as Island 95 and the centennial area. Some native patches were found, and any invasive patches were cut. The Park team also found a reduction in size at the site around Little Dog Channel and 2 around Chimney Bay, all of which were cut again in 2022.

In the fall of 2022, the Park hired the Invasive *Phragmites* Control Centre to cut and remove *Phragmites* on the south-eastern side of Beausoleil Island for two weeks. The amphibious cutting machines known as Truxors had their abilities tested in the dense, monoculture stands but they were able to do a great job removing some of the patches. Since the work was done later in the season, water levels were low and thus certain patches were unable to be cut. In total, the truxors removed approximately 3 hectares of invasive *Phragmites* from the coast of Beausoleil Island in 11.5 days.

There is lots of work to still happen in the coming years and GBF is looking forward to continuing our collaboration with the Park. \*



Figure 30: Identifying native *Phragmites* on Island 95 of GBINP.



Georgian Bay Land Trust (GBLT)

In 2022 the GBLT did invasive *Phragmites* removal on 12 Mile Bay alongside the Nature Conservancy and Moose Deer Point First Nation, the Alexander Islands and the Port Severn Wetland properties. They also visited Giant’s Tomb and were happy not to see any *Phragmites* growing back. Their invasive *Phragmites* removal activities spanned about three days of cutting and 30 volunteers helping.

Beausoleil First Nation (BFN)

In 2020, GBF conducted a presentation to BFN about invasive *Phragmites* identification and management. In 2021, GBF had the opportunity to join a Climate Change Committee meeting hosted by BFN to further discuss invasive *Phragmites* on Christian Island. With support from BFN and funding from the Green Shovels Collaborative, GBF worked with BFN to develop a management plan for invasive *Phragmites* removal on Christian Island. The plan began in 2022, involving mapping to understand the issue, obtaining the proper equipment for removal activities, conducting training workshops, recruiting volunteers, educating the community and incorporating the plan into BFN Education Department’s co-op program. This summer, student’s in the reach ahead credit program on the Island took part in invasive *Phragmites* training and removal at Douglas Lake, an inland lake on the island. BFN plans to continue these activities in 2023. The community also hosted a community cut in August near the main ferry dock.



Figure 31: Beausoleil First Nation students cutting at Douglas Lake.

Nottawasaga Valley Conservation Association (NVCA)

Since 2014, the NVCA has organized the “Fight the Phrag” community effort in Collingwood to conduct *Phragmites* removal. In 2021, the project continued for an 8<sup>th</sup> year with funding support from GBF and in-kind support from other local groups and municipalities. 2022 control efforts focused on the Collingwood shoreline and lower reaches of Black Ash Creek. The NVCA also assisted the Blue Mountain Watershed Trust to control some areas along Hwy 26 within the Silver Creek Wetland. The team mapped 4,767 m<sup>2</sup> and removed 2,710 m<sup>2</sup>, or 57% of the growth, equating to 1,695 kg! Key community partners in 2022 included Blue Mountain Watershed Trust, Town of Collingwood, Shoreline Condo Associations (Collingwood) and community volunteers. 27 individuals dedicated their time to *Phragmites* removal activities in the community, bringing recruitment up to 470 volunteers since 2014. In 2023, NVCA hopes to continue work with the Wasaga Beach shoreline condos.

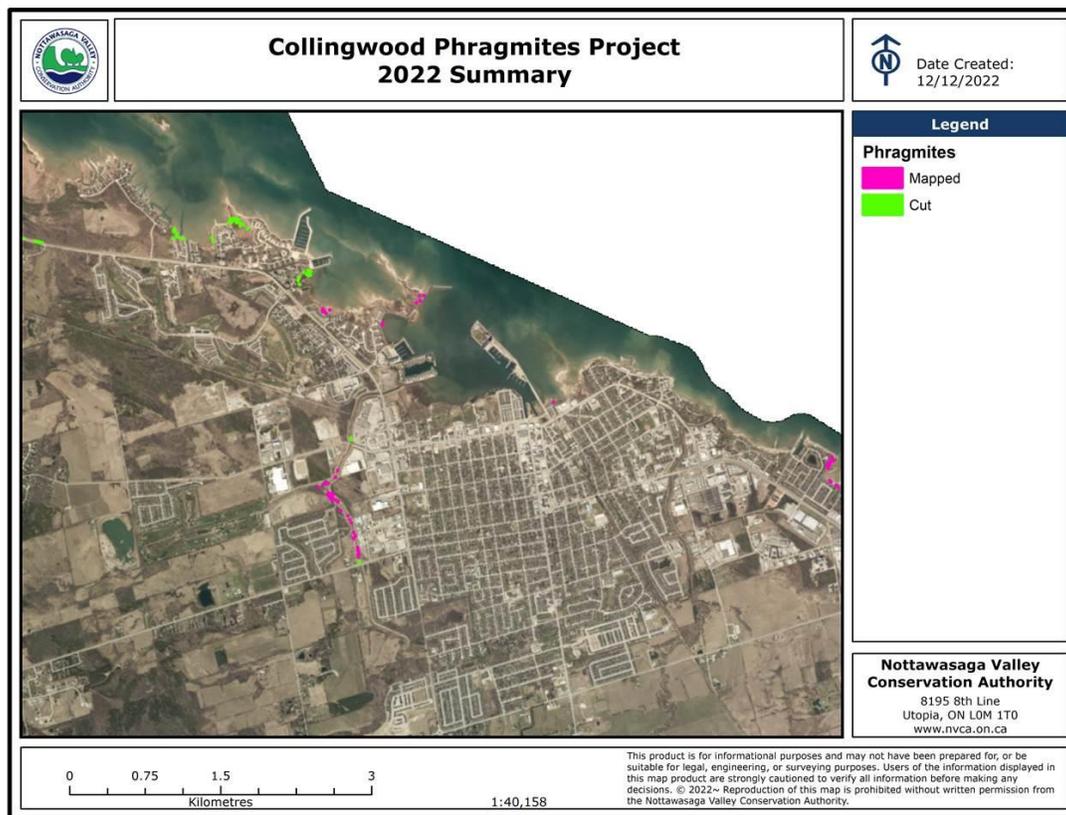


Figure 32: Map of invasive *Phragmites* identified and/or cut in Collingwood in 2022 provided by the NVCA.

Nature Conservancy of Canada

Written by: Carolyn Davies, Coordinator, Conservation Biology, Nature Conservancy of Canada

Over the 2022 field season, the Nature Conservancy of Canada has continued to expand our invasive *Phragmites* control program in the Eastern Georgian Bay Coast with the generous support from the Ganawenim Meshkiki’s Eastern Georgian Bay Initiative.

Our 2022 activities can be summarized into three main categories:

1. Mapping *Phragmites* – the *Phragmites* FieldMaps database we created in 2021, using our, Georgian Bay Land Trust, and EDD maps *Phragmites* locations, was expanded to include more data on each *Phragmites* patch in the database, such as the hydrological condition of the soil, to assist in future control efforts. We are currently working to expand this mapping database further, by including data from new partners working on the landscape. We are excited to work with Georgian Bay Forever as a partner and contributor to this landscape-scale *Phragmites* map and database, along with the Georgian Bay Biosphere Reserve and Severn Sound



Environmental Association, which will allow us to better understand the extent of invasive *Phragmites* and ensure future control efforts are more effective.

2. Mechanical control of *Phragmites* – across 4 days in August, NCC staff joined Georgian Bay Forever and Georgian Bay Land Trust staff and volunteers to cut stands of invasive *Phragmites* at three locations. No chemical control methods were used for this work in accordance with the funder’s request. The primary goal of our *Phragmites* control work is to protect Georgian Bay and the surrounding habitats for species-at-risk. We continue to build partnerships and are planning to expand our *Phragmites* control program further in 2023 with a new partner – Parks Canada - and additional time spent controlling *Phragmites* in the field.
3. Education & Outreach – in 2022, NCC completed and posted to YouTube a video to share information on what invasive *Phragmites* is, why it is bad, and the best management practices for mechanical control of *Phragmites* with the general public. This video has been shared via social media, through a Federation of Ontario Cottage Associations (FOCA) Elert, in a direct letter to relevant cottage associations, and with attendees of the inaugural Ganawenim Meshkiki conference. Additionally, NCC is engaging with Indigenous communities along the Eastern Georgian Bay Coast to support their invasive *Phragmites* control needs. NCC is thrilled to partner with Georgian Bay Forever for the eradication of invasive *Phragmites* and look forward to improving regional collaboration and coordination as a next step for all *Phragmites* partners in the Eastern Georgian Bay Coast region in 2023 and beyond.

### Wasauksing First Nation

Written by: Neil Canvin, Natural Resources Manager, Wasauksing First Nation

*Phragmites a.* has become visibly more prevalent on Wasauksing First Nation’s roadsides and wetlands, which has led to initiatives to track its spread. Several stands of roadside *Phragmites* at varying stages of development were found, and their geographic coordinates were recorded. After the invasive stands of *Phragmites* were located, we then began taking steps for their removal. Through assistance from members of Georgian Bay Forever (GBF) and Parry Sound Cottagers' Association (PICA), we were able to apply cut treatments on our largest roadside *Phragmites* stand, through the use of tools such as shovels and raspberry cane cutters. Next year’s objective would hopefully involve identifying and removing *Phragmites a.* stands from our wetland ecosystems. Continued monitoring of *Phragmites a.* stands will also be completed year-over-year, to create a more concise timeline for action.



Figure 33: Wasauksing First Nation’s Natural Resource Manager, Neil Canvin, standing amongst the large, overgrown patch of invasive *Phragmites*.



### Nipissing First Nation

In early 2022, GBF attended a presentation conducted by Nipissing First Nation (NFN) talking about their invasive *Phragmites* mapping utilizing drone technology. Interested in this work, GBF reached out to NFN to learn more about their drone work. In conversation, GBF was invited up to NFN which is located on the north side of Lake Nipissing for a drone demonstration. NFN was also interested in learning more about invasive *Phragmites* to begin a control program, thus GBF travelled up to Lake Nipissing for a drone demonstration, *Phragmites* workshop and a community cut with NFN summer students. GBF looks forward to building a relationship with NFN, sharing knowledge and learning from each other's experience managing invasive *Phragmites* in future years. Thank you, Curtis and team, for the drone demonstration and a fun day of cutting *Phragmites*! GBF plans to utilize this technique and collaborate more with NFN in 2023.



Figure 34: Cutting invasive *Phragmites* with the Nipissing First Nation community, along the shores of Lake Nipissing.

### Magnetawan First Nation

Magnetawan First Nation has been successfully managing invasive *Phragmites* on their lands and the Magnetawan River since 2020. The site on the river has been cut each year and has been found to decrease in size and density. In 2022, a terrestrial site was found near the railroad and was cut for the first time. GBF staff joined Magnetawan First Nation in the summer to help with the removal of this site. In 2023, the Lands Department team plans to monitor and remove this site again, hoping it will have reduced in size. Magnetawan First Nation also kindly wrote guest articles in both our [Summer and Fall Newsletters](#) to share their progress of *Phragmites* removal as well as accomplishments and goals of their program.

Thank you to the team at Magnetawan First Nation for inviting us out for a boat ride and swim along the river! We look forward to maintaining and building a relationship with the Magnetawan community in 2023.

### The Land Between

In July, members from [The Land Between Charity](#) joined GBF in Waubauskene during one of the community cuts at the Dock/Beach area. GBF hosted a training workshop where The Land Between staff got a chance to learn about invasive *Phragmites*, how to identify it and properly remove using the cut to drown technique. The Land Between covers a large region of southern Ontario from Parry Sound across the Ottawa Valley carrying out various projects and activities to engage the public in connecting, caring for and conserving nature. The organization has developed a “Phrag Fighters” program in which they can provide training to local groups, municipalities, and/or assist in removal and disposal. The Land Between also wrote an article on behaviour change in our Winter 2023 Newsletter.



Figure 35: The Land Between learning about Phragmites management and control.

## Ministry of Transportation

Part of protecting management investments made is implementing or improved road management by all stakeholders. GBF and its partners have made many efforts on progressively increasing MTO participation over the years. 2021 efforts included “*Invasive Phragmites Road Management: A Webinar for Municipalities and First Nations in the Georgian Bay Area.*” – hosted by GBF and Township of the Archipelago (ToA), which included Dr. J. Gilbert, Invasive Phragmites Control Centre, speaking about techniques, but also involved an update by MTO (efforts in 2020 for some areas in the general Georgian Bay/Muskoka area, and their plan in 2021). In 2022 we were unable to get an update on the progress of these proposed plans for highway control around the Georgian Bay area, but we are working toward improving that communication for 2023.





## Conclusion

2022 marks the 10<sup>th</sup> year of Georgian Bay Forever’s efforts in invasive *Phragmites* management on the eastern shores of Georgian Bay. Due to our generous funders, donors, dedicated staff and volunteers from the community, GBF has been incredibly successful and thus able to start relocating efforts into regions of Georgian Bay that were never focused much on before. Because of this, we are seeing a large increase in the number of total sites mapped this year, but what is more significant is the increase in number of sites in the monitoring or eradicated stage. In 2020, approximately 39% of stands from the Township of Tay, Township of Georgian Bay and the Township of the Archipelago were monitored/eradicated. On these same shorelines, 57% of stands are monitoring/eradicated as of 2022. With the new addition of Matchedash Bay and its 44 stands, we are at a total of 53% monitored/eradicated.

- ❖ Total of 968 invasive *Phragmites* sites in the summer of 2021
- ❖ 94 new stands identified.
- ❖ 514 sites, or 53% are eradicated.
- ❖ 270 or 28% of sites cut by GBF staff, volunteers, Ontario Parks, and PaBIA Marine Patrol
- ❖ 784, or 81% of sites are under control (eradicated/monitored and cut) by GBF
- ❖ >150 volunteer hours dedicated.

Thank you, Jared McNabb, Johnpaul Robson, Natalie Elliott, Ruby Hopkins, Simon Leonard, and Claire Hendriks for all your hard work!

Further thanks to all the communities that have supported Georgian Bay Forever initiatives and the volunteers that spent countless hours removing invasive *Phragmites* from Georgian Bay.

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*Follow the link to an interactive map of all stands on the eastern shoreline of Georgian Bay in:*

**2021** <https://arcg.is/4HaDa0>

**2022** <https://arcg.is/Ou0Kj>

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