

GEORGIAN BAY
FOREVER



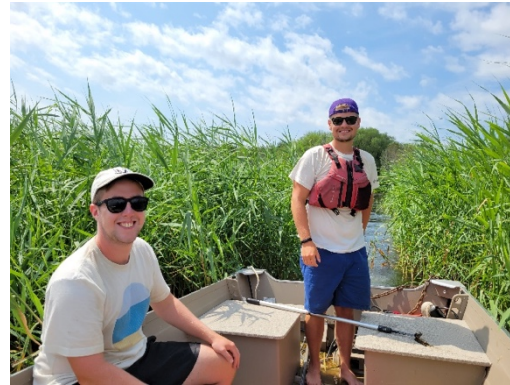
Protecting your water.



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

2021 Report





Authors

This report was prepared 2021 by Georgian Bay Forever

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Acknowledgements

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Executive Summary

Georgian Bay Forever (GBF) has been working with invasive *Phragmites* along the Eastern shorelines of Georgian Bay, Lake Huron for the past 9 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 and funded by Ganawenim Meshkiki and Habitat Stewardship Protection (Environment and Climate Change Canada) in Matchedash Bay. 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.

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 15 ft. high, and spread rapidly threatening biodiversity, habitat, and enjoyment of the shoreline.



Highlights

As of 2021, we are seeing nearly 50% eradication across the Township of the Archipelago, Township of Georgian Bay and Tay Township with a plan of 90% eradication by 2025 if funding and support continue at requested levels. With this plan, *Phragmites* could be so diminished by 2025 that we can expect coastal communities to be well equipped to manage any leftover stands and new stands that may appear. With the additional stands found across the 1,800 hectares of Matchedash Bay, we are at 45% eradication, which is still 5% higher than in 2020, and a total count of 904 stands.

- ❖ GBF staff mapped a total of 904 invasive *Phragmites* sites in the summer of 2021
- ❖ 198 new stands identified due to an increase in mapping efforts including our newly explored area, Matchedash Bay.
- ❖ 403 sites of the 904, or 45%, are eradicated
- ❖ 279 or 31% of sites were cut by GBF staff and volunteers
- ❖ 682, or 75% of sites are under control (eradicated/monitored and cut) by GBF
- ❖ ~325 volunteer hours dedicated (following COVID-19 protocols)

In 2019 GBF developed a 5-year plan to aim for 90% eradication by 2025 of the original 588 stands mapped. Due to GBFs successful efforts, we have been able to relocate our time and efforts in new areas leading to the increase in number of stands.

Thank you to our 2021 Phragbusters Sean Mullin, Jared McNabb, David Grgas-Hastings and Adam Rupik 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 2021 field season to remove invasive *Phragmites*. If you have questions about the current report, please contact Project Coordinator Nicole Carpenter at Nicole.carpenter@gbf.org or 905-880-4945 ext.7.



Figure 1: Beautiful Georgian Bay coast.

Overview Table and Map

Table 1: Breakdown of invasive Phragmites sites found across the eastern shoreline of Georgian Bay in 2021.

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	67	1	52	13	65	2	78%	19%	97%
Township of Georgian Bay	523	97	267	146	413	110	51%	28%	79%
Tay Township	270	59	84	102	186	84	31%	38%	69%
Total	860	157	403	261	664	196	47%	30%	77%
Matchedash Bay	44	41	0	18	18	26	0%	41%	41%
Overall Total	904	198	403	279	682	222	45%	31%	75%



Figure 2: Aerial photo of Quarry Island. Photo Credit: The Water Brothers - thewaterbrothers.ca

Follow the link to an interactive map of all stands on the eastern shoreline of Georgian Bay in 2021:
<https://arcg.is/4HaDa0>

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 unwillfully 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. But, 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 poisoning our native species that have not evolved to live in harmony with it. 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 ecosystems that 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 15 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: [Phragmites Identification Tips | Georgian Bay Forever](#)



Figure 3: 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:** Using a mapping software (i.e., Google Maps), we identify the locations in which invasive *Phragmites* is present. We record 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 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 eradication 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, sparser 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 determined 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 Project Coordinator Nicole Carpenter at nicole.carpenter@gbf.org or 905-880-4945 ext. 7.

If you are interested in volunteering and becoming a Phragbuster, contact Nicole.carpenter@gbf.org



Breakdown by Area

Tay Township

Table 2: Invasive Phragmites sites in Tay Township 2021.

	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	270	59	84	102	186	84	31%	38%	69%

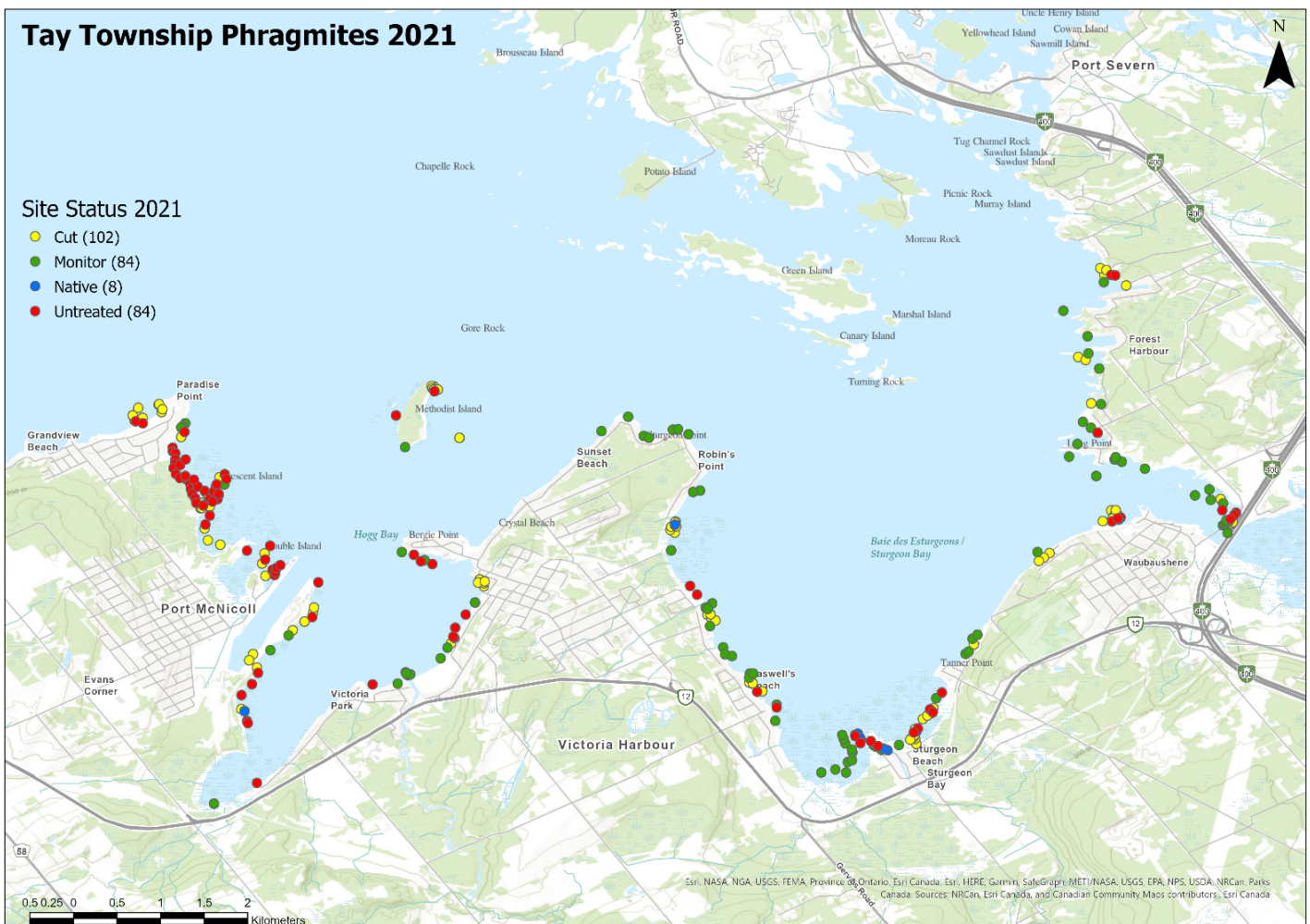


Figure 4: Map of all Phragmites locations in Tay Township 2021. Each point represents a stand of Phragmites.

In 2021, 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 270 sites across 30km of Tay Township’s shorelines on Georgian Bay of which 59 of these were new. 84 of the total sites were not visible to GBF staff, putting these sites in the eradicated or monitoring stage. This year, GBF summer staff and volunteers cut a total of 102 sites. When totalling the number of sites eradicated, monitoring and cut, we see an overall control of 69%, leaving 31% of sites untreated.

This year, GBF had not only 2 students dedicated to Tay Township but purchased an additional boat for these students to conduct their work. This significantly increased GBF’s time spent in Tay.

As we have seen over the last 3 years, Tay Township coasts are home to many large sites (Table 3). In 2019, GBF did not have a boat in Tay Township and thus had to map and cut in areas accessible by road only. In 2020, GBF was able to conduct their work on the water, explaining the large increase in sites from 2019 to 2020. Summer Phragbusters split their time between Tay Township and Georgian Bay Township.

In 2021, 54% (100) of the 185 **sites visible** were greater than 10m². Though there is an increase in large sites, we are seeing a great increase in the number of sites not visible (i.e., eradicated). This may be the reason for a decrease in the number of sites under 10m². This proves that our cut to drown method is working. With each year, we get closer to eradication and re-establishment of native biodiversity, funding pending.

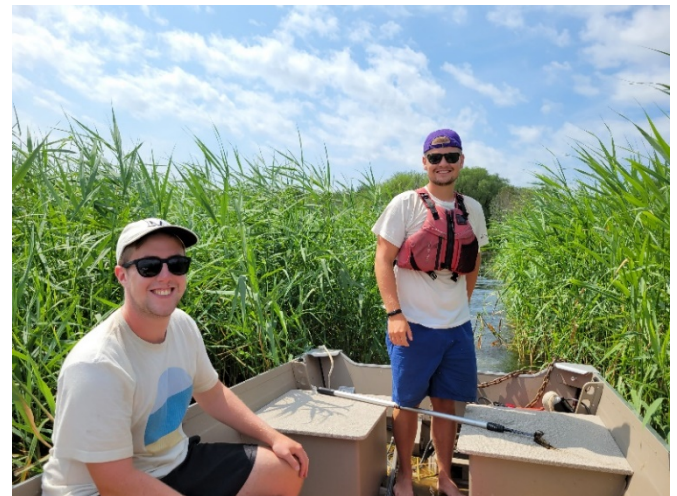


Figure 5: Tay Township Phragbusters Jared (left) and Sean (right) boating through a patch of Phragmites at Calvert Park.

Table 3: Progress of invasive Phragmites management in Tay Township since 2019.

	Eradicated/Monitored	Sites Visible	Under 10m2	Greater than 10m2
2021 (270 sites)	84	185	85	100
2020 (214 sites)	32	182	132	82
2019 (155 sites)	0	155	47	108

Table 4: Status of recurring sites (mapped previous to 2021) vs. new sites found in 2021 in Tay Township.

	Recurring Sites	New Sites 2021	Total
Eradicated/Monitoring	83	n/a	83
Cut	52	47	99
Untreated	77	15	92
Total	212	62	274
Percent Control (Eradicated + Cut)	64%	76%	66%

Community Cuts in Tay

GBF staff hosted 3 community cuts in Tay of which 150 volunteer hours were donated.

1. Tay Shore Trail – Talpines Community Group



Figure 6: Talpines community group Phragbusting on the Tay Shore Trail. 600kg of Phragmites was cut and disposed of!

2. Delta Drive



Figure 7: GBF Phragbuster working hard at the Delta Drive community cut.

Delta Drive received cutting treatment from truxors in 2020 and upon return this summer, very little had grown back along the shoreline. This use of truxors in 2020 was seen as quite successful and the regrowth can now be managed by GBF staff and community members to push this area into eradication. A community cut took place with 3 GBF staff and 10 volunteers each dedicating a half to full day of cutting the regrowth. We removed approximately 500kg of invasive *Phragmites* from the Delta Drive shoreline.

3. Waubaushene Dock/Beach



Figure 8: Tay Phragbusters Sean and Jared hosting the Waubaushene Dock Community Cut.

Media Attention in Tay Township

The community cut hosted at the Waubaushene Dock/Beach area gained some media attention of which the article titled, “‘Phragbusters’ lay siege to Waubaushene’s invasive species” written by Derek Howard was shared by Barrie Today, Orillia Matters, Bay Today, Toronto Star and more. Summer Phragbuster, Jared McNabb, was interviewed and was a great representative for GBF. Over 500 kg of invasive *Phragmites* was removed.

‘Phragbusters’ lay siege to Waubaushene’s invasive species

‘It is an invasive species, and what it does is it smothers out other plants and aquatic wildlife, including fish habitat,’ says township councillor

Aug 8, 2021 6:00 PM By: [Derek Howard](#)



Members of Georgian Bay Forever, Tay Township council and volunteers wade into the shallow depths of Waubaushene Beach to control invasive phragmites through cutting to drown methods. | Derek Howard

Figure 9: Article written by Derek Howard about the Waubaushene Community Cut hosted by GBF in August 2021.



Figure 10: GBF Phragbuster Jared and members of Tay Township council at the Waubaushene community cut. Photo Credit: The Water Brothers – thewaterbrothers.ca

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 as seen on the map to the right.

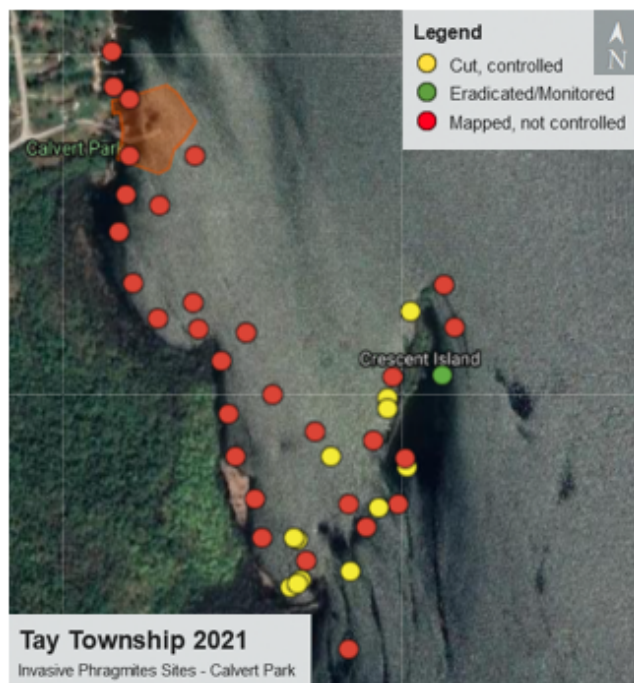


Figure 11: Close-up map of the Calvert Park Phragmites locations.

Forest Harbour Cut

One of the largest sites in Tay Township was 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.

Before



Figure 12: Site 158 in Forest Harbour before cutting.

Mid-cut



Figure 13: Site 158 in Forest Harbour mid-way cut.

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. This year GBF began exploring Matchedash Bay and its tributaries for invasive *Phragmites*. In previous years, GBF staff had noticed invasive *Phragmites* growth at the mouth of Matchedash Bay to Georgian Bay in the Waubaushene area along highway 400. Because of this, it was presumed invasive *Phragmites* could most likely be growing elsewhere in the area. 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), MTM Conservation Association, GBF mapped a total of 44 invasive *Phragmites* sites throughout the main Bay proper, the tributaries and surrounding marshes. This being the first year in Matchedash Bay, 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. Some sites were only accessible by canoe travel through beaver paths.

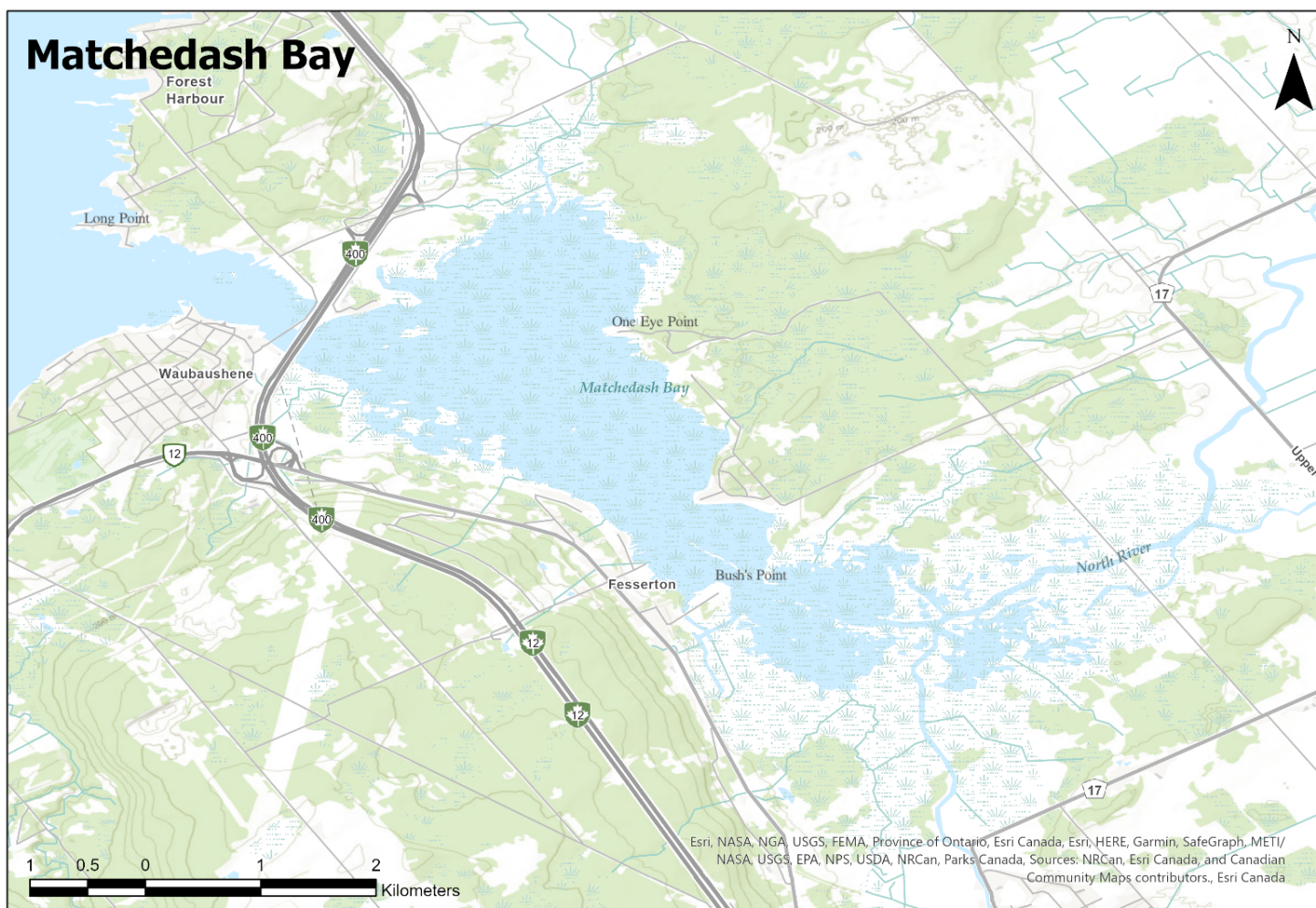


Figure 14: Map of Matchedash Bay.

Table 5: Breakdown of the 44 invasive Phragmites sites found in Matchedash 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
Matchedash Bay	44	41	0	18	18	26	0%	41%	41%

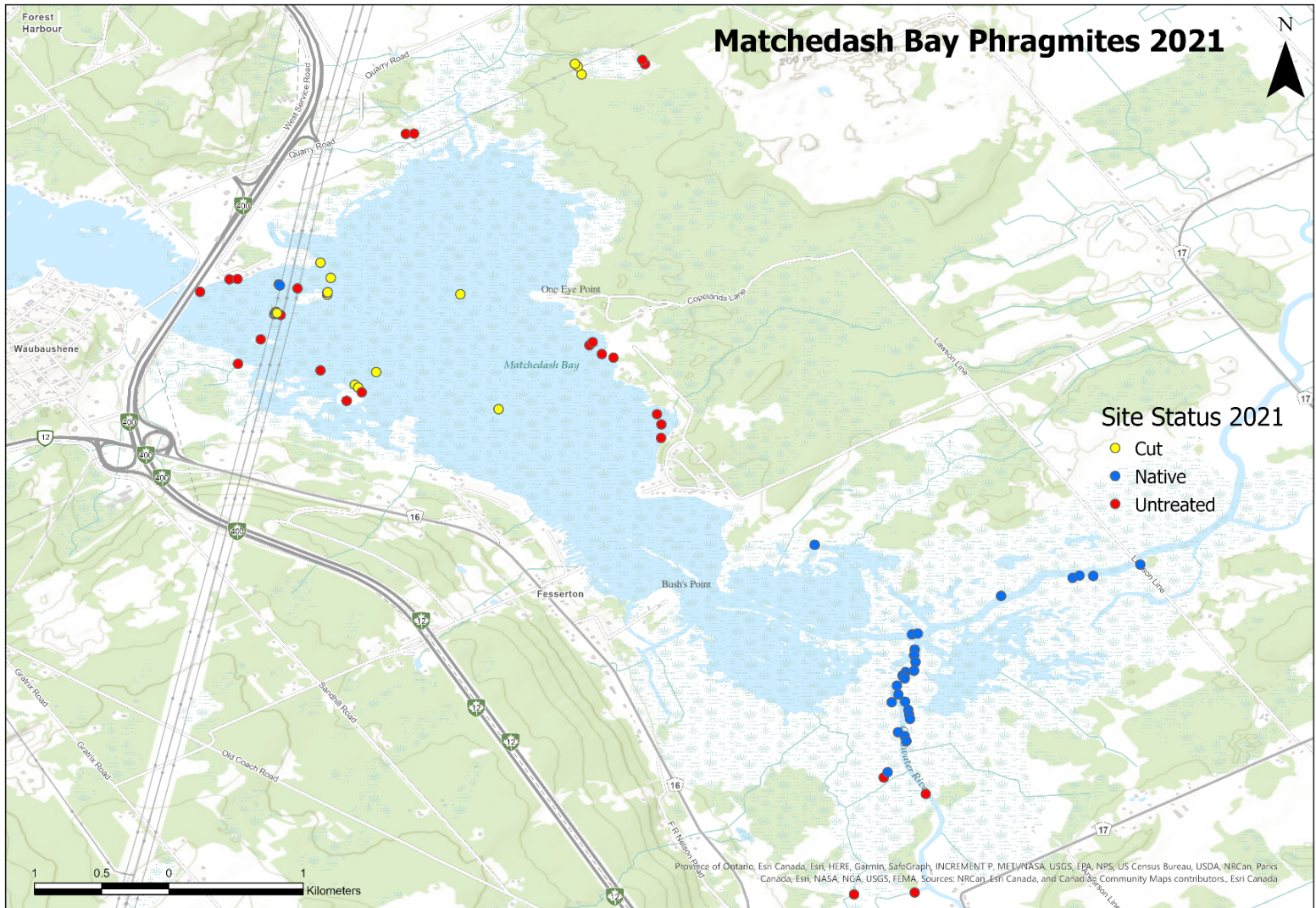


Figure 15: Map of all Phragmites sites in Matchedash Bay (18 cut, 28 native, 26 untreated).

DNA Sampling

Along the North River and Coldwater River there were many sites of uncertainty found. The *Phragmites* in these locations were large, dense and tall like invasive *Phragmites* but also displayed a lighter green/yellow colour, red stalks and sparse seed heads similar to the native strain. In discussions with SSEA and MTM Conservation Association, there was still uncertainty in the identification of these sites. In the fall of 2021, GBF's Project Coordinator collected 7 samples and sent them to the Wendell Lab at Oakland University for analysis (<https://doi.org/10.1016/j.jglr.2021.08.002>). 6 out of 7 of these samples were identified as the native lineage, *Phragmites australis americanus*. With these results, we are able to better plan for the 2022 season, knowing which sites to cut and which to leave. Our results have led us to determined that Matchedash Bay is home to a total of 28 native stands of *Phragmites* in addition to the 44 invasive stands.

Community Cuts

In August, 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. Though these sites were not overly dense, the stalks found growing here were some of the tallest we have seen across the eastern shoreline of Georgian Bay. After cutting these sites we found 2 others located on the other side of the pond that we aim to cut in 2022.



Figure 16: Nicole taking samples for DNA testing on the North River. Results showed this as native *Phragmites*.



Figure 17: GBF and MTM staff and volunteers proud of their long, hard day Phragbusting at Heron Pond!

Township of Georgian Bay

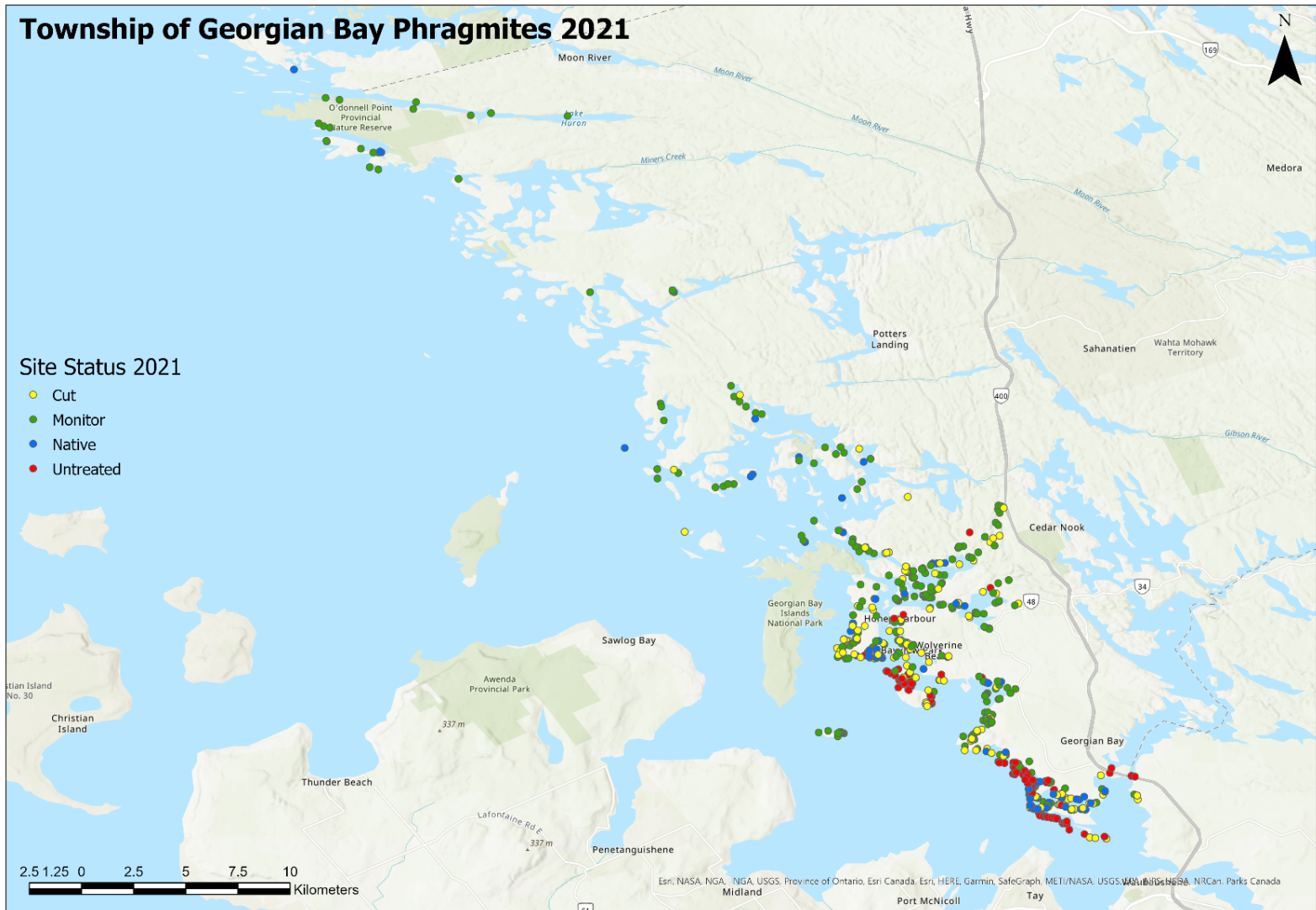


Figure 18: Map of all Phragmites stands along Georgian Bay's coasts of the Township of Georgian Bay in 2021.

For the purposes of this report, the Township of Georgian Bay has been broken down into 8 regions or communities: Wah Wah Taysee and 12 Mile Bay, 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 523 invasive *Phragmites* stands were mapped along these 8 regions and by the end of the 2021, GBF and community volunteers have nearly 80% of the Township of Georgian Bay under control. With this success, more focus can be put on providing that 20% with treatment. This year, GBF Phragbusters and volunteers cut 146 sites, put 267 in the monitoring/eradicated stage and found 97 new sites across the Township of Georgian Bay.



Table 6: 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	17	0	17	0	17	0	100%	0	100%
Go Home	4	0	4	0	4	0	100%	0	100%
Cognashene	32	1	27	5	32	0	84%	16%	100%
Honey Harbour	217	19	134	76	210	7	62%	35%	97%
Present Island	9	0	9	0	9	0	100%	0	100%
Quarry Island	42	12	3	14	17	25	7%	33%	40%
Wolverine Beach/ Macey's Bay	60	6	39	19	58	2	65%	32%	97%
Severn Sound/Port Severn	142	59	34	32	66	76	24%	23%	47%
TOTAL	523	97	267	146	413	110	51%	28%	79%

Wah Wah Taysee/12 Mile Bay and Go Home Bay

Table 7: 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
Wah Wah/ 12 Mile	17	0	17	0	17	0	100	0	100
Go Home	4	0	4	0	4	0	100	0	100

21 sites were monitored in Wah Wah Taysee, 12-mile Bay and Go Home Bay by dedicated community members this year. We are seeing 100% control in these areas, and they will continue to be monitored by the community next summer. There are some locations in proximity to 12 Mile Bay that are located on Indigenous land or park land and thus are to be monitored by indigenous people, the federal government or Ontario Parks staff, or managed by Georgian Bay Islands National Park.

Since there is little to no growth, it is very important to continue monitoring these areas next year to ensure 100% eradication.

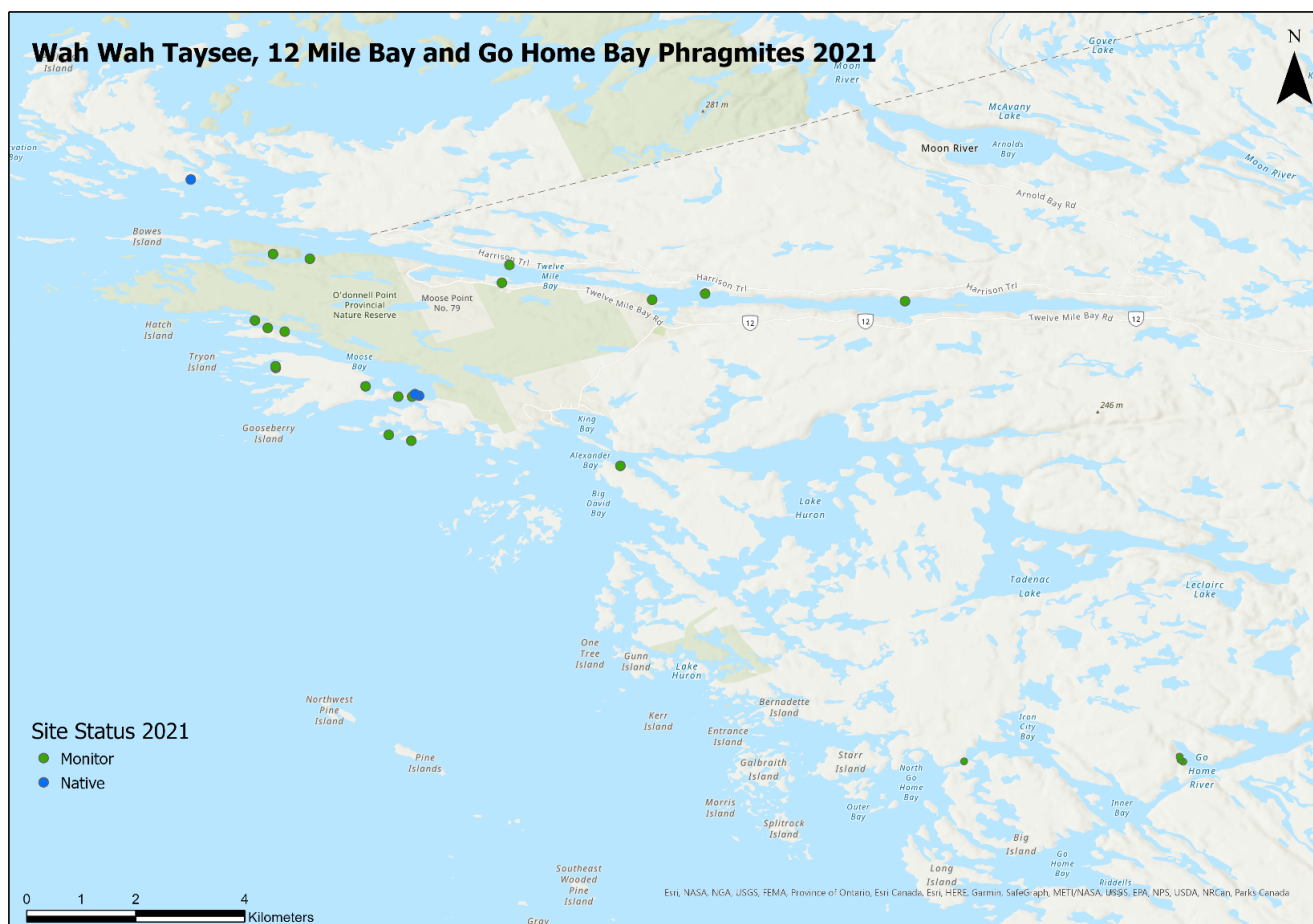


Figure 19: Map of Wah Wah Taysee, 12 Mile Bay and Go Home Bay invasive Phragmites sites.



Figure 21: Site 17 in Cognashene before cutting.



Figure 22: Site 17 in Cognashene after cutting.

Honey Harbour

Table 9: Status of the 217 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
Honey Harbour	217	19	134	76	210	7	62	35	97

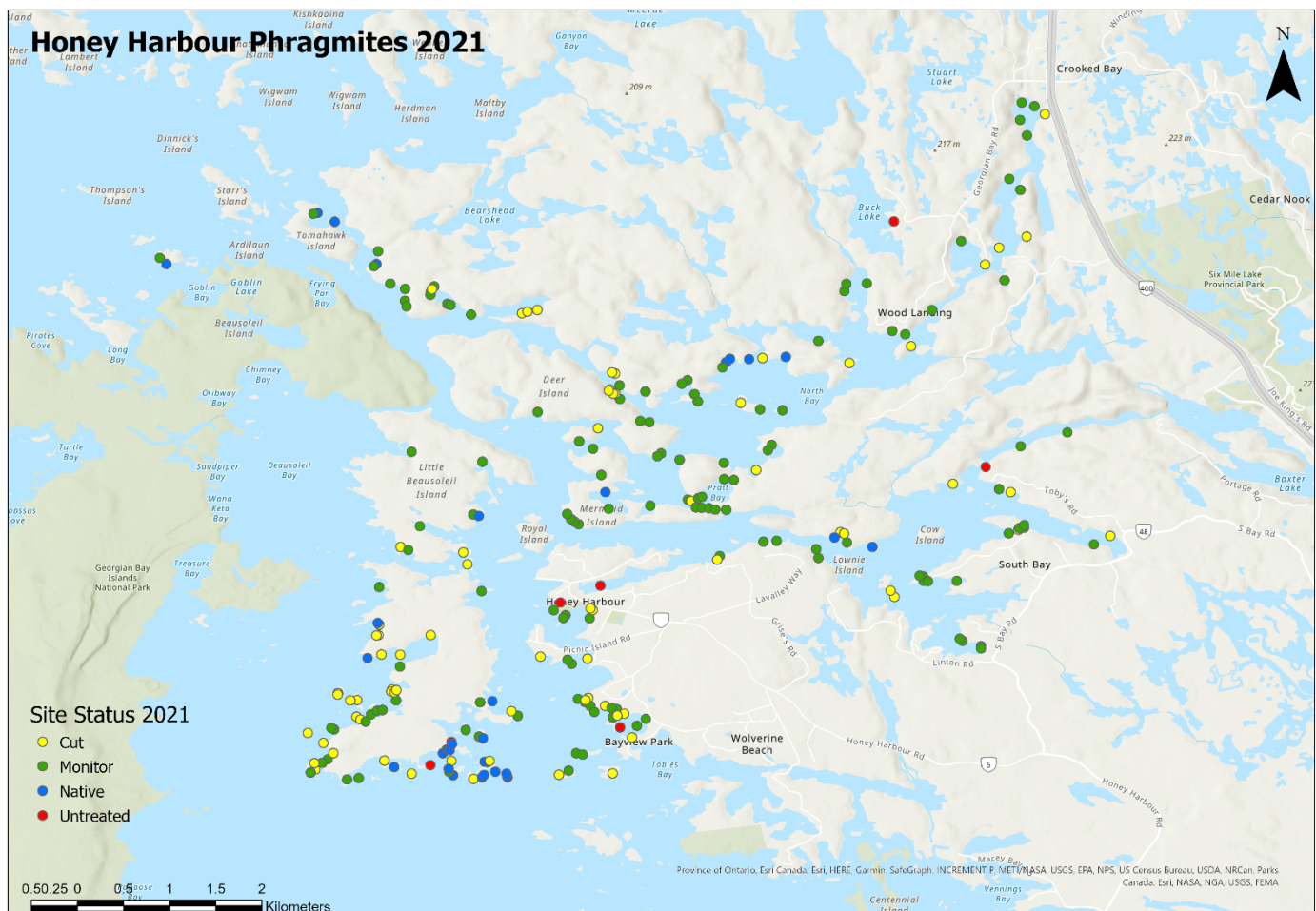


Figure 23: Map of all sites in Honey Harbour in 2021.

Honey Harbour has 217 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*. 62% of the sites were not visible this year and thus are in the monitoring/eradicated stage. GBF staff and volunteers still had to cut 76 sites, or 35%, throughout Honey Harbour and only left 7 untreated. Though this may seem like a lot of sites to still have to control, they were quite small and easily manageable. Only 5 sites were large and dense

(20m²), such as site 14 seen in figure 22 and 23. The last 7 sites were only left untreated due to inaccessibility from construction and water levels too low for the Baykeeper to reach. In addition, a few sites GBF has managed are in-land such as a site on Buck Lake which has been controlled previously but was not checked this year. GBF will be working with the Nature Conservancy to share knowledge of land-based sites such as the one on Buck Lake and possibly passover the responsibility. In 2022, 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, leadership efforts in the community by Bonnie Blanchard, and the volunteers!



Figure 24: Site 14 in Honey Harbour before cutting.



Figure 25: Site 14 in Honey Harbour after cutting.

Present Island

Table 10: Status of all 9 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
Present Island	9	0	9	0	9	0	100	0	100

Present Island has 9 sites that we did not see any regrowth for the second year in a row. GBF will continue to monitor Present Island in 2022 to ensure there is no more *Phragmites* growing.

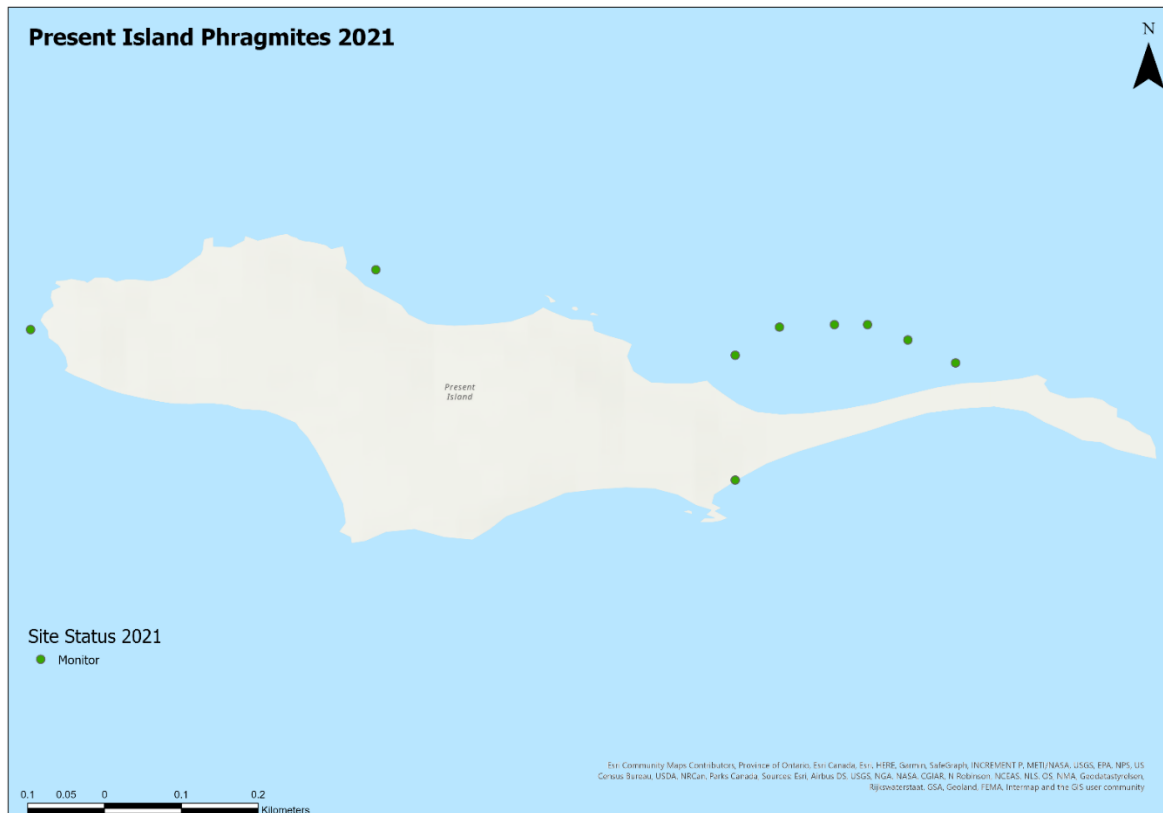


Figure 26: Map of invasive *Phragmites* sites on Present Island in 2021.

Quarry Island

Table 11: Status of the 42 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
Quarry Island	42	12	3	14	17	25	7	33	40

In September of 2021, 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. We contracted the Invasive *Phragmites* Control Center (IPCC) for 2 days of work, of which we had 1 truxor that removed 2 extremely large, dense patches. As seen in some of the images below, there is still quite a bit of treatment that needs to be done at Quarry Island next year. We hope to have the IPCC come once again to deploy their truxors.



Figure 27: IPCC truxor removing a large stand of *Phragmites* at Quarry Island.

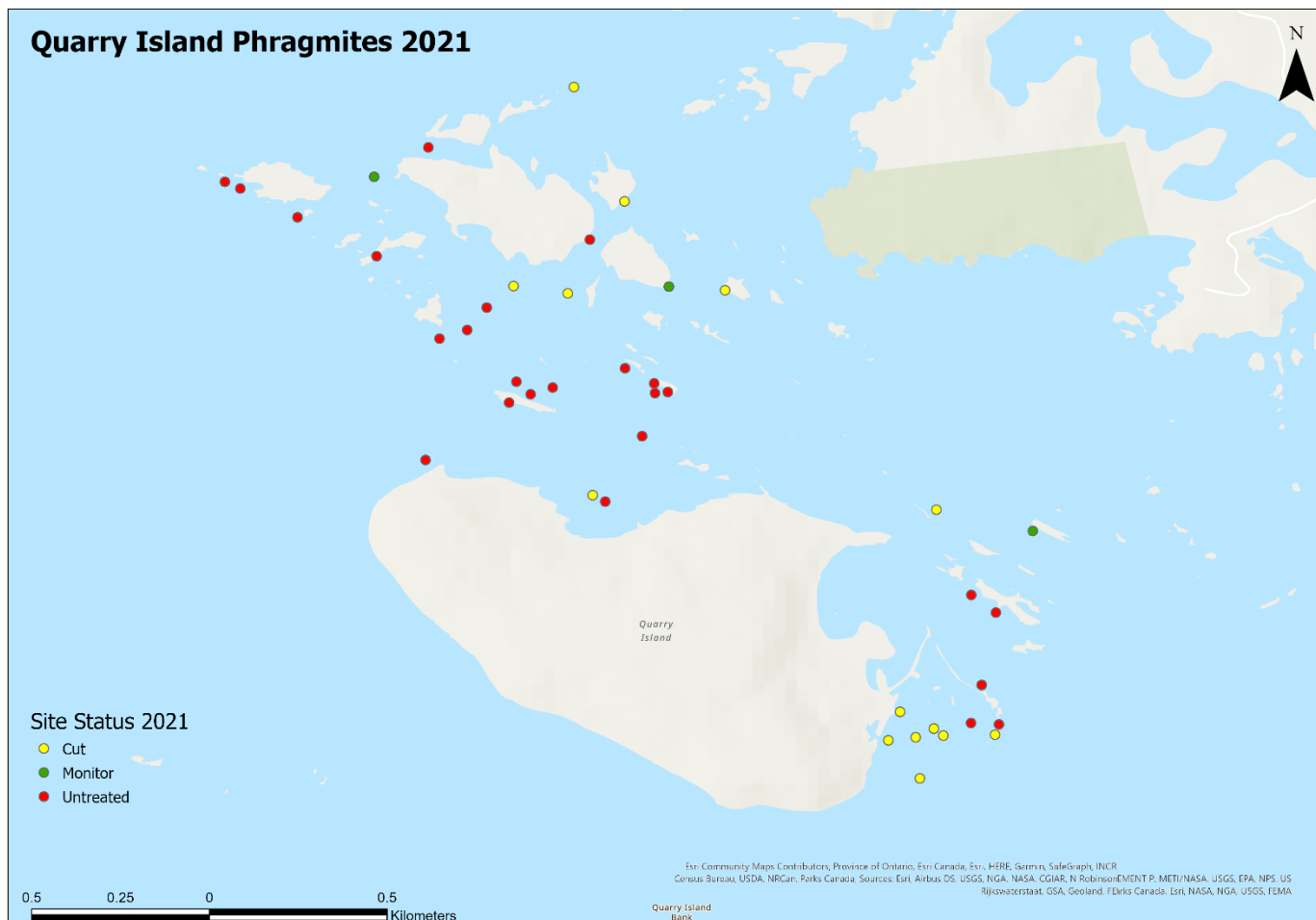


Figure 28: Map of Quarry Island sites 2021.

Quarry Island Community Cut

Prior to the truxors, 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. GBF staff and volunteers spent an entire day around Quarry Island cutting 4 large stands.



Figure 29: GBF and volunteers Phragbusting at Quarry Island.

Wolverine Beach to Macey's Bay

Table 12: 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
Wolverine Beach/ Macey's Bay	60	6	39	19	58	2	65%	32%	97%

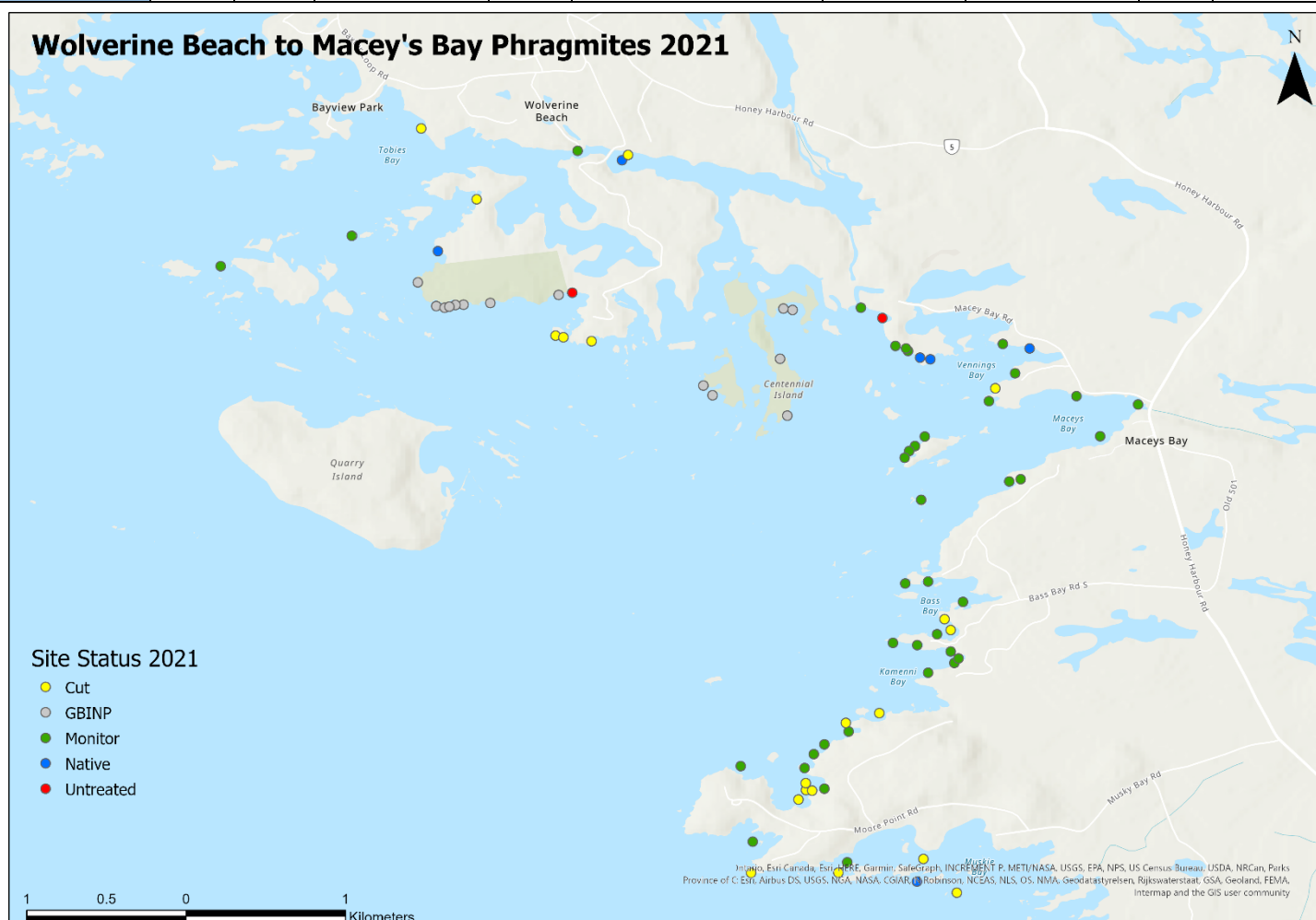


Figure 30: Map of Wolverine Beach and Macey's Bay sites in 2021. This map also includes some of GBINP sites mapped by GBF in 2021, but not controlled.

The coastline from Wolverine Beach south to Macey's Bay is currently at 97% control and 65% is eradicated. 19 sites, or 32%, were cut this year. In this region, there are some sites found on GBINP land represented by the grey points. These sites were not managed this year. Looking into 2022, GBF and Parks Canada (GBINP) will be collaborating to organize group cuts to remove these sites before they get too large. See page 31 for an update on GBINP invasive *Phragmites*.

Severn Sound/Port Severn

As in 2020, Severn Sound remains a focus area to allocate more time and effort due to the success GBF has had in other regions of Georgian Bay Township. GBF staff and volunteers were able to control almost 50% of sites in Severn Sound. 59 new sites were mapped putting us at a total of 142 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 and becoming quite large. A community cut was hosted by GBF Phragbusters at Green Island with a few volunteers from a local cottaging family.

Table 13: Status of the 142 sites in Severn Sound and Port Severn.

	Total sites	New Sites	# of sites Eradicated/Monitored	# of sites Cut	# of sites Controlled (Eradicated/Monitored + Cut)	# of sites Untreated	% Eradicated/Monitored	% Cut	% Control
Severn Sound/Port Severn	142	59	34	32	66	76	24	23	47

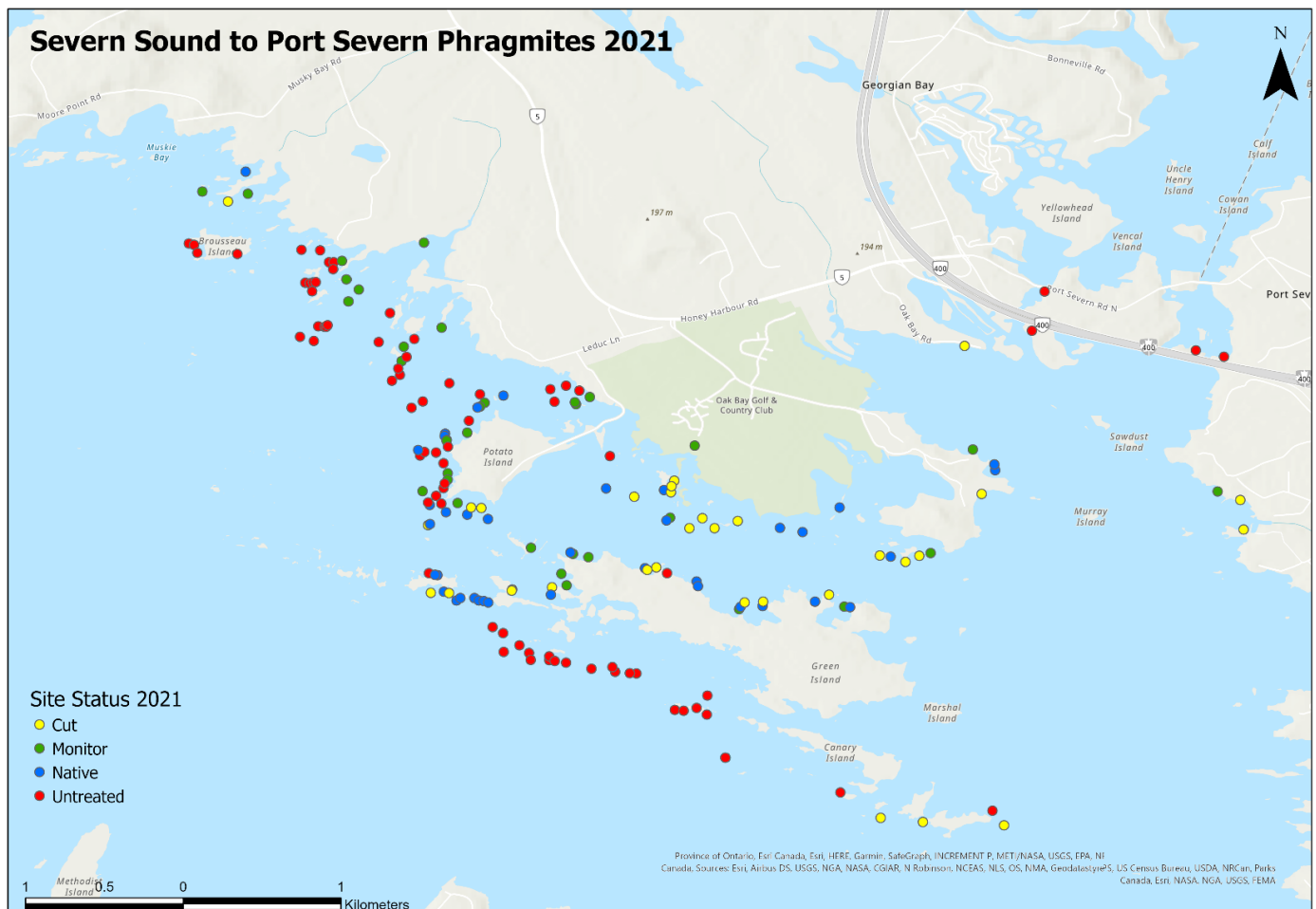


Figure 31: Map of Severn Sound and Port Severn sites 2021.

Township of the Archipelago

	Total sites	New Sites	# of sites Eradicated/ Monitored	# of sites Cut	# of sites Controlled (Eradicated/ Monitored + Cut)	# of sites Untreated	% Eradicated/ Monitored	% Cut	% Control
ToA	67	1	52	13	65	2	78%	19%	97%

Table 14: Status of all 67 sites in the Township of the Archipelago, including Massasauga Provincial Park in 2021.

In 2021, the Township of the Archipelago (ToA) received 97% control on the 67 sites mapped of which only 1 new stand was found in Massasauga Provincial Park, and it was cut by Ontario Parks staff. In the past, Massasauga Provincial Park had 27 active sites but as of 2021 Ontario Parks staff have managed to put 25 in the eradicated or monitoring stage and remove 2 stands. Sites in Woods Bay, South Channel, Pointe au Baril and Manitou are all in the monitoring or eradicated stage and are being successfully managed by community members. Bayfield Nares has had volunteers like Anne Stewart and Andrew Kolody which have kept watch over Phragmites in their area for years. And so many that just do it on their own – we salute you!

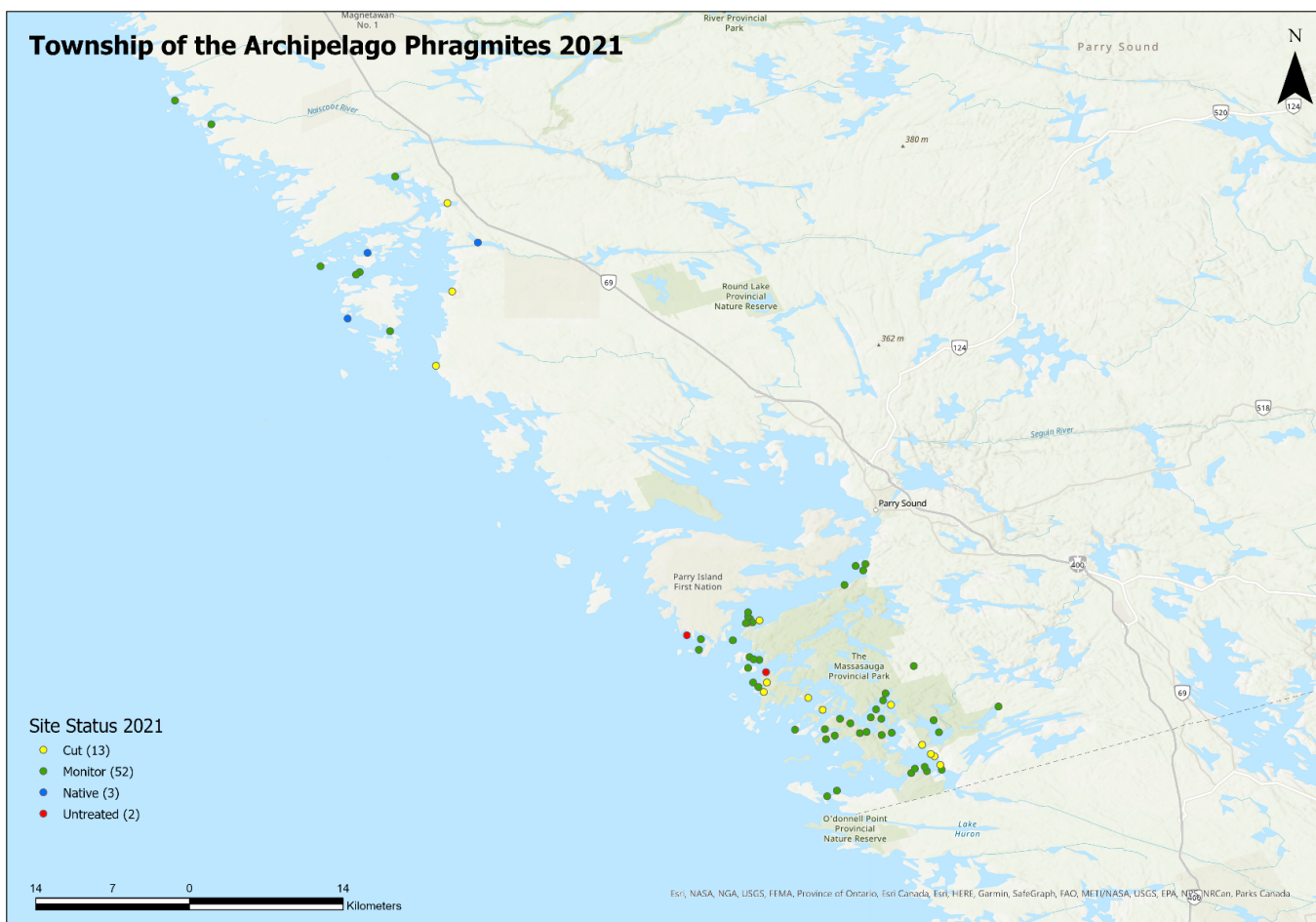


Figure 32: Map of the Township of the Archipelago invasive Phragmites sites 2021.

Sans Souci and Copperhead, and the South Channel

Katherine has been monitoring 36 sites over the years, and 22 are not present anymore! And it's probably more than that. It has been challenging for Katherine to organize monitoring as COVID restrictions made it difficult for her to be in Georgian Bay for the last 2 summers. How has she helped accomplish this? Diligent effort over a lot of years. In 2018 and 2019, she worked with GBF (Heather Sargeant), the Woods Bay Association and Friends of Massasauga Park (Sue McPhedran), the South Channel (Peter Adams) to help Massasauga Park devise a plan and get resources to tackle sites using data accumulated from a Georgian Bay Land Trust grant. These combined efforts led to 10 of the 36 sites mentioned here being eradicated, as well as others in the park which you will read about later. She has also diligently managed other sites over the years with wonderful volunteers (Monique, Luc, Greg, Thomas, Brain, Beth, Peter, Matt, Madi, Teresa, Tom and others). This year, even with COVID limiting her time in the Bay, Katherine was able to do 2 cuts with Thomas Dancy. Hopefully, things are better next year and the 7 or so other sites on private property or crown land can get looked at. Thank you to Sans Souci and all the volunteers, and Katherine, Madi Ledsham, Tom Denune, Teresa Long, and Thomas Dancy for their known work this year in challenging conditions! A lot of progress made.

And then there is Peter Adams in the South Channel. He has been leading and working with his community for years to eradicate invasive *Phragmites*, and with GBF in the 2018/2019 successful initiative to help Massasauga Park put together a plan and resources to manage Park coastal *Phragmites* (see below). **Peter reported this year – that of the 11 sites he monitors – all of them were not appearing – they were gone!** Thank you to Peter Adams and all the volunteers in the South Channel for their amazing work.



Katherine Denune and Thomas Dancy tackle *Phragmites* in 2021 in Sans Souci



Phragmites at Tranquility Island. Getting it early matters.

Moon River

Heather Sargeant (GBF Communications Director and Woods Bay Association Director) has been diligently tackling *Phragmites* in Woods Bay and area over the years with amazing volunteers. A special shout out goes out to Sue McPhedran who in 2018/2019 was part of the GBF led coalition to successfully help the Park get resources to tackle *Phragmites* over the years.

This year's crew included many long-time Phragbusters : Urs Villager, Paul Sine, Cadi Reece, and Heather Sargeant. We missed our young crew – as COVID put a damper on trying to put too many events and crews together. And – there is less work ! But the work left is still physically demanding. There were also scary and challenging conditions – extreme heat, a sudden heavy downpour with lightning, and heavy underwater brush. But we made it through!

The Moon River phragbusters are happy to report

There are 10 sites in the coastal Woods Bay area.

- ✓ 6 sites gone and being monitored (2 by Parks). Thx past helpers.
- ✓ 3 sites cut by the woods Bay Phagbusting crew in 2020 (the remaining 1 looked like it has been partially cut by owner)



Some scenes Phragbusting in Woods Bay.

Point au Baril Islander's Association (PaBIA) – Marine Patrol

GBF joined Point au Baril's Marine Patrol in July to conduct an invasive *Phragmites* refresher workshop with returning Marine Patrol students who have done a great job in managing *Phragmites* in Point au Baril. In August, GBF Project Coordinator and 2 summer staff returned to Point au Baril for a day in the field and to better understand the area. Point au Baril has 7 sites in the eradicated or monitoring stage and only 3 very small sites that needed to be cut this year by the Marine Patrol. It will be crucial to continue to monitor the area next year, but we don't expect to see any significant re-growth. The Point au Baril sites are included in our total Township of the Archipelago count.



Figure 33: GBF Phragbusters Sean and Jared joining the Point au Baril Marine Patrol, Tom and Chris.

Massasauga Provincial Park

The following update was provided from the Phragmites Australis 2021 written report by Ethan Prialux and Silos Betts from 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, staff monitored each of these sites and found some sites contained shoots decaying below the surface while others had grown new shoots. Two sites were in need of removal this summer using the cut to

drown method. One was found in Port Rawson Bay near a campsite where there had been *Phragmites* found before. It consisted of two small patches that were easily removed. A new site was found in Lough Bay and was cut and disposed of in August. The Massasauga Provincial Park sites are included in our total Township of the Archipelago count.

Collaborative

Georgian Bay Islands National Park (GBINP) – Beausoleil Island

Written by: Laura Baldwin, Project Coordinator (Invasive Species Management)

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.

Similar to the Georgian Bay Forever team, Park staff complete annual mapping of *Phragmites* populations, physical removal of *Phragmites* stalks and educating park visitors about the management and prevention of invasive species.

In July 2021, the Park hired the Invasive *Phragmites* Control Centre to cut and remove *Phragmites* on the south-eastern side of Beausoleil Island. 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. For the remainder of the season, Park staff focused removal efforts on smaller, more manageable stands that could be controlled by hand tools and trimmers. The community may have noticed Park staff working in Little Dog Channel. The team mapped over 300 sites of *Phragmites* and were able to control over 90 sites using the Truxors, the cut to drown method or spading techniques. These sites ranged from large, dense one-hectare sized patches to individual stems isolated on the shoreline. There is lots of work to still happen in the coming years and the Park looks forward to the opportunity to work more with Georgian Bay Forever and the local community.



Figure 34: IPCC Truxors working to cut *Phragmites* from Beausoleil Island (GBINP).



Figure 35: Aerial photo of Beausoleil Island shorelines infested with invasive *Phragmites*. Photo credits: The Water Brothers - thewaterbrothers.ca.

Georgian Bay Land Trust (GBLT)

GBF joined the GBLT this summer on Giant's Tomb Island in Georgian Bay to check on an inland site that has been cut in previous years. In the past this site was very large, so we investigated the location thoroughly and we saw very little regrowth only having to remove a few stalks. One of GBF's Phragbusters also assisted the GBLT at a site in King Bay utilizing our Stihl gas powered cutters. GBLT also participated in GBF's and the Township of The Archipelago webinar for municipalities and First Nations on improving road management of invasive *Phragmites*.

Beausoleil First Nation (BFN)

In 2020, GBF conducted a presentation to BFN about invasive *Phragmites* identification and management. This year 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 will be working, over the winter 2021/2022, closely with BFN to develop a management plan for invasive *Phragmites* removal on Christian Island. The plan, which will be implemented in 2022, will involve mapping to understand the issue, obtain the proper equipment for removal activities, conduct training workshops, recruit volunteers, educate the community and

incorporate the plan into BFN Education Department's co-op program. This summer, GBF's project coordinator visited Christian Island twice to identify some stands, get to know the area and meet with members of the Education Department.



Figure 36: Largest site of invasive Phragmites found on Christian Island, 2021 in close proximity to Jerry's Lake.

Federation of Ontario Cottager's Association (FOCA)

Through funding provided from Green Shovels to FOCA, 2 cottage associations reached out to GBF to learn about invasive *Phragmites* management. GBF's Project Coordinator visited Parry Island and Bass Lake to educate members on identification, removal, disposal, and management techniques. Educational material was also provided to the associations to share with cottagers in their area.

GBF did not investigate Parry Island during this visit, but one large stand was found on Rose Point Rd in close proximity to the bridge onto Parry Island. The cottage association collaborates with the Wasauksing First Nation to spread awareness and get approval for removal. In addition, one of GBF's education outreach coordinators (summer Phragbuster) is a cottager on the island and did some investigation to identify *Phragmites*. GBF's staff identified one stand on Wawbawzee Rd. Parry Island will continue to be monitored and these sites will be checked again next year.

GBF investigated the entire shoreline of Bass Lake and did not spot any invasive *Phragmites* aside from one site growing up from the shoreline on private property in a pond that flows out to the lake. We left a brochure with some educational material and contact information. There is further growth in roadside ditches part of the Bass Lake watershed, including the 14th Line boat launch, posing a potential risk for future establishment in the lake.

Nottawasaga Valley Conservation Association (NVCA)



Healthy Watershed, Healthy Communities

Collingwood

Since 2014, the NVCA has organized the “Fight the Phrag” community effort in Collingwood to conduct *Phragmites* removal. In 2021, the project continued for a 7th year with funding support from GBF and in-kind support from other local groups and municipalities. From 2014-2021, 445 volunteers have contributed over 2500 hours to help remove over 16 ,000 kg of invasive *Phragmites* from Collingwood’s shorelines. The NVCA used gas-powered hedge-trimmers on large monoculture stands and shears/clippers for manual removal of sparse stands growing amongst native vegetation. The main focus of the 2021 field season was at Rupert’s Landing, Highway 26, Black Ash Creek, The Cove and Lighthouse Point. The NVCA cut approximately 1300m² of *Phragmites* weighing at a total of 1190 kg. In addition, 19 volunteers from the community got involved dedicating a total of 91 hours over the season.

A special shout out by GBF to Stella Juhasz - a donor and volunteer for Georgian Bay Forever and the Blue Mountain Watershed Trust (great Phragbuster helpers and leaders in Collingwood). Stella has been very active and passionate leader and worker in eradicating invasive *Phragmites*.

Ministry of Transportation – Progress but still gaps

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), and important location information from the Georgian Bay Land Trust. To watch the webinar, visit: Part 1: https://youtu.be/NtpUK_OBGV8 and Part 2: <https://youtu.be/rQfqddBrpJk>.

Within the webinar, MTO noted what they did in 2019, 2020 and planned to in 2021 (which need to be confirmed). Essentially, they noted that they would update the Phragmites inventory where needed and retreat any 2020 areas as required and do some expansion. There is good progress, but it is hard to understand whether they are getting to 5% of the problem or 95% of the problem (eg. what about secondary highways and where are these roads?). Transparency is an issue, and you will also note communication to local stakeholders continues to be much less than needed as you will notice from the responses to poll questions to municipal and First Nations attendees (noted below).

2019 Season – Phragmites Treated

Highways	400 Port Severn to Mac Tier
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2020 Season – Phragmites Treated

Highways	400 Barrie to Port Severn, 6, 10, 11, 26, 35, 89, 118, 141, 124, 518, 520
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MTO Continued. Their plan for 2021 (needs confirmation of what was accomplished)

2021 Season – Phragmites Treatment Planned (funding dependent)

Highways	400 Port Severn to Sudbury, 6, 10, 11, 12, 26, 35, 89, 93, 118, 124, 141, 518, 520
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Poll results from Municipal/First Nations Roads Webinar – Attendance and Questions:

-Shows much more funding and directed/trained resources need to be allocated to municipalities to more on their roads, and they are looking for much better communication from MTO

- ✓ **Reach results** of webinar - 118 registrants (rough break down 54 municipalities out of a possible 82, 4 First Nations, 8 organizations).
- ✓ **Intention results** - Learning= 42% said they learned a lot, 52% said they learned some new info, only 3% (1 person) said they did not learn anything new but already did road Phragmites management, and 1 person said that they would not act
- ✓ **Within webinar** - provided suggested resolutions for municipalities to help improve management action of this invasive. Aside from asking for execution in the webinar, our partner, the ToA sent the resolutions to every municipality in Ontario.
- ✓ **Road Management:** According to the in-webinar polls, 89% know there is invasive Phragmites on the roads (11% don't know), but **only 40%** have a road management plan in place.
- ✓ **Question:** Do you know how to manage invasive Phragmites on the roads? Or know where to go for more info.
 - **Answer:** 40% - Yes; 46% -More comfortable, but need more info; 14% - No
- ✓ **Question:** Do you know who to reach out to coordinate Phragmites management in areas where the province and your roads might overlap?
 - **Answer:** 66% - Yes; 34% - No
- ✓ Would it be helpful to have MTO representation at these meetings?
 - **Answer:** 98% - Yes; 2% - No

Georgian Bay Forever and its partners will continue to push when and where possible for improving management on roads because they are a spread vector to coasts.

Conclusion

2021 marks the 9th year of Georgian Bay Forever's efforts in invasive *Phragmites* management on the eastern shores of Georgian Bay. Due to our generous funders, 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, 50% of stands are monitoring/eradicated as of 2021. With the new addition of Matchedash Bay and its 44 stands, we are at a total of 45% monitored/eradicated.

- ❖ Total of 904 invasive *Phragmites* sites in the summer of 2021
- ❖ 198 new stands identified
- ❖ 403 sites, or 45% are eradicated
- ❖ 279 or 31% of sites cut by GBF staff, volunteers, Ontario Parks and PaBIA Marine Patrol
- ❖ 682, or 75% of sites are under control (eradicated/monitored and cut) by GBF
- ❖ ~325 volunteer hours dedicated (following COVID-19 protocols)

Thank you GBF summer staff: Sean M., Jared M., David G-H., and Adam R., for all your hard work!

Further thanks to all the communities that have supported Georgian Bay Forever initiatives, the volunteers that spent 325 hours removing invasive *Phragmites* from Georgian Bay and to our donors and funders who make it all possible.

Follow the link to an interactive map of all stands on the eastern shoreline of Georgian Bay in 2021:
<https://arcg.is/4HaDa0>
