

Invasive Phragmites Control at Long Point Region

Implementation Plan - 2021

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Southern Region, Aylmer District

Ministry of the Environment, Conservation and Parks
Ontario Parks, Southwest Zone

Nature Conservancy of Canada

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1.0 Background Information

1.1 Phragmites and the 2020 Pilot Control Project

European Common Reed, (*Phragmites australis* (Cav.) Trin. Ex Steud) *Phragmites* is an invasive perennial grass that was transported from Eurasia and is causing severe degradation to coastal wetlands and beaches in North America. In 2005, Agriculture and Agri-Food Canada identified it as the nation's "worst" invasive plant species.

Once established in an area, *Phragmites* can rapidly form extensive monocultures that displace native plant and animal species, decreasing biodiversity, and threatening the habitats of numerous provincially and federally-listed Species at Risk.

The Ministry of Northern Development, Mines, Natural Resources and Forestry (the ministry) and the Ministry of the Environment, Conservation and Parks have recognized *Phragmites* as a significant threat to biodiversity and Species at Risk at Long Point coastal marshes. Prior to 2016, the ministry worked with several partners in an attempt to eradicate invasive *Phragmites* from these locations. Efforts were unsuccessful in controlling the spread of *Phragmites*, primarily due to the lack of a registered herbicide for use in Canada in wet areas.

To address the exponential growth of *Phragmites* in wet areas in the Long Point region (includes Long Point, Turkey Point and lower Big Creek Watershed), the ministry was approved by Health Canada's Pest Management Regulatory Agency for an Emergency Registration as a pilot project to allow for ground application of an herbicide (active ingredient glyphosate) in wet areas between 2016 and 2020. During this time, herbicide applications were conducted by aerial (by helicopter in 2016, 2017 and 2018), and ground methods (2016-2020).

Due to successful control of *Phragmites* on both provincial and private lands at Long Point Region, the focus of the pilot program in 2021 is solely on follow-up ground herbicide applications to address regrowth, and small populations that may have not yet been treated. Ground application is better suited to address low density *Phragmites* stands.

In 2021, the Pest Management Regulatory Agency registered Habitat Aqua Herbicide for use in Canada in aquatic habitats for the control of invasive Phragmites. As a result, all herbicide control work will be conducted using this fully registered product.

Implementation of this year's pilot project is scheduled to occur between August 15 and October 31, 2021, focused on retreatments by ground applications as necessary.

2.0 Purpose and Rationale

The purpose of this project is to control invasive Phragmites to reduce or remove the threat to the biodiversity and ecological integrity of these areas. The tools and techniques used are based on best available information, which are summarized within the documents *Invasive Phragmites – Best Management Practices* (MNRF 2011) and the Ontario Invasive Plant Council's *Invasive Phragmites – Best Management Practices* (2020) and based on the experience of project staff from the ministry, Ministry of the Environment, Conservation and Parks and the Nature Conservancy of Canada.

The initiation and continuation of this pilot project is based on the presence of significant natural values and the observed exponential growth of Phragmites in these coastal marshes – if left unchecked. Local biologists and scientists advised that the health of these coastal marshes is at a critical tipping point. If action was not taken to control Phragmites, the provincial, national and global significant values for which these areas are recognized would be lost. Due to the aggressive nature of the invasive plant, if follow up control efforts are not continued in 2021, it will provide the opportunity for the plant to recolonize in areas previously treated.

Phragmites threatens the ecological and recreational importance of Long Point Bay areas. Stands of Phragmites crowd out native vegetation and hinder native wildlife from using the area, resulting in a decrease in both plant and animal biodiversity. Invasive Phragmites can also lead to changes in hydrology, causing boating channels to become overgrown, wetlands to dry up, loss of nursery and spawning habitat for fish, and access points for recreation.

Prior to initiation of the pilot in 2016, the ministry, MECP and other organizations had been working to ensure that ecological integrity is maintained in these areas by controlling Phragmites where it occurs on dry land using a variety of techniques

including a combination of herbicide, mechanical controls, and prescribed burns. However, the success of these control activities was limited due to the lack of registered herbicides for use in aquatic habitats in Canada. This restricted the extent of control activities and enabled Phragmites to continue to spread and thrive in these coastal marsh areas, contributing to ongoing degradation of ecological integrity.

Registration of herbicide products is a federal procedure conducted by Health Canada's Pest Management Regulatory Agency. The ministry received approval from the Pest Management Regulatory Agency between 2016 and 2020 to use a glyphosate based herbicide (Roundup Custom) in wetland areas of Long Point Bay and Rondeau Provincial Park under emergency registrations. The basis of the emergency was due to the imminent threat that Phragmites poses to species at risk within these sensitive wetland complexes. Over this time period, invasive Phragmites has been successfully controlled with efficacy observed at greater than 95%, on established vegetation plots.

The recent registration of Habitat Aqua herbicide (active ingredient is imazapyr) by the Pest Management Regulatory Agency for use in aquatic habitats for invasive Phragmites has provided a new tool for the management of this invasive plant across Canada. PMRA's decision to register this product was based on an evaluation that under the approved conditions of use, the health and environment risks of this product are low.

This herbicide has also been approved for aquatic use in the United States (the U.S.) by the Environmental Protection Agency for over a decade, and is considered to be environmentally safe and extremely effective in coastal wetland restoration efforts. It is used successfully by several U.S. states for controlling Phragmites in coastal wetland areas in the Lake Erie basin. As a result, Habitat Aqua will be utilized for Phragmites control in 2021.

2.1 Long Point Region

The Long Point Region (including the Turkey Point wetland complex and lower Big Creek watershed) is internationally recognized under the United Nations Educational, Scientific and Cultural Organization's World Biosphere Reserve program, and under the Ramsar Convention as an internationally important wetland. Additionally, these areas are designated as Provincially Significant Wetlands, and a Provincial Life Science Area of Natural and Scientific Interest.

The Long Point Region sand spits and associated marshes are also globally significant Important Bird Areas for threatened and congregatory species, waterfowl concentrations, and migratory land bird concentrations. The Long Point peninsula itself is a significant migratory bird hotspot that attracts birders from around the world who contribute to the local economy.

Additionally, the Long Point area provides many recreational and tourism opportunities, including angling, waterfowl hunting, camping, hiking, nature appreciation, and several water sports. It is also critical spawning and nursery grounds supporting the important Lake Erie commercial fishing industry and several non-commercial fisheries.

3.0 Project Description

The Ministry of Northern Development, Mines, Natural Resources and Forestry and the Ministry of the Environment, Conservation and Parks have considered the use of all approved methods and tools for Phragmites control, in order to attempt to manage Phragmites occurring on Crown lands. Tools and methods currently registered and available for use are outlined in detail within the guidance document “Invasive Phragmites – Best Management Practices” (Ministry of Natural Resources and Forestry, 2011 and Ontario Invasive Plant Council, 2020).

In 2015, both ministries completed project requirements under both the Ministry of Northern Development, Mines, Natural Resources and Forestry's Class Environmental Assessment for Resource Stewardship and Facility Development and the Class Environmental Assessment for Provincial Parks and Conservation Reserves. Staff also completed these requirements to expand the control areas to include Turkey Point and the Big Creek Watershed (2017) and Turkey Point Provincial Park (2017/2018).

Because no single control mechanism is effective on its own for this species, an Integrated Pest Management approach will be taken to control Phragmites. Control actions may include any combination of cultural control (e.g., burning), mechanical control (e.g., rolling or cutting) and chemical control (e.g., herbicide application).

Between August 15 and October 31, 2021, the ministry in collaboration with the Ministry of the Environment, Conservation and Parks' Ontario Parks, and the Nature Conservancy of Canada will undertake control of Phragmites using a variety of methods

of herbicide application, as per the conditions that have been prescribed by the Pest Management Regulatory Agency on the product label, and as permitted by the Ministry of Environment, Conservation and Parks through their Permit(s) to Perform an Aquatic Extermination and authorizations issued by Fisheries and Oceans Canada. The Nature Conservancy of Canada is the leading partner on this project in terms of coordination and treatment of Phragmites on private lands.

Herbicides will be applied by ground methods, within the Long Point Region; it should be noted that the herbicide is applied directly to Phragmites, and that herbicide will not be sprayed in open water areas. The areas proposed for treatment in 2021 are outlined below.

- Long Point Crown Marsh and Long Point Provincial Park (Figure 1)
- Long Point (Private lands and Long Point Crown Tip) (Figure 2)
- Turkey Point Provincial Park (Figure 3)
- Turkey Point Wetland Complex (Private lands) (Figure 4)
- North shore of Long Point Inner Bay (Figure 5)
- Norfolk County (private lands) (Figure 6)

If conditions and resources permit, following the herbicide treatment of Phragmites, it will be cut or rolled (no earlier than 3-4 weeks after pesticide treatment to ensure sufficient transport of the herbicide to the root system) and possibly burned during the appropriate window. Sites will be checked post-treatment, to document success or need for repeat treatments (i.e. presence/absence of Phragmites).

4.0 Environmental Mitigation

4.1 Chemical Control

An herbicide (Habitat® Aqua Herbicide, Registration Number 32374 Pest Control Products Act; active ingredient imazapyr) will be used in this project. This use will follow all requirements of the *Ontario Pesticides Act*, the federal *Pest Control Products Act*, and all other relevant legislation. Use of this pesticide will be done following Integrated Pest Management principles including:

1. Focusing control actions to vulnerable stages of the target plant;

2. Using appropriate application technology to minimize non-target impacts;
3. Monitoring weather and only applying when off-target deposition can be minimized;
4. Integrating herbicide control with other physical methods (rolling, burning) to maximize effectiveness;
5. Associated monitoring of effects on soil, water and wildlife;
6. Monitoring, evaluation and reporting of the results of this spray program.

4.2 Reducing Non-target Impacts to Wildlife and Plants

4.2.1 Herbicide Application Area

Herbicide application will be targeted Phragmites plants directly and will not be sprayed in open water areas. All efforts will be undertaken to minimize non-target impacts to other plant species. The timing of herbicide application will also assist to avoid impacts to the majority of native plants as they will be entering dormancy for the winter.

4.2.2 Herbicide Application Timing

For Long Point Crown Marsh, Long Point Provincial Park, Turkey Point Provincial Park and Long Point Tip ground herbicide application may occur any time between August 15th – October 31st, 2020. Herbicide application is intended to occur prior to the opening of waterfowl season on September 25th, 2021. Application will not occur on Waterfowler Heritage Day on September 18th, 2021.

Operations in the private lands of Long Point may occur between August 15th and October 31st.

This timing window is also ideal for minimizing indirect impacts, as bird breeding/nesting seasons are completed, amphibians and reptiles will be staging (preparation stages for hibernation), most native plants have senesced and insects have completed the majority of their life stages.

4.2.3 Follow Up Treatments (Cutting, Rolling and Prescribed Burning)Timing

Once treated, follow up treatments are an important component of an integrated management plan for Phragmites. This can involve cutting, rolling and/or burning of standing dead stalks to allow native plants to re-establish.

Rolling and/or cutting of dead stalks of *Phragmites* generally occurs in the winter months when there is sufficient ice cover to enable access by equipment.

Prescribed burns for *Phragmites* may be undertaken between November 1st, 2021 and March 31st, 2022 – and is dependent on several environmental factors. The ministry and partners will aim to burn the treated sites during this timing window. Use of data loggers during dormant season burns has shown that below ground temperature increases from fire are minor in nature and are limited to ~1 inch depths from the surface. Therefore, the ministry is confident that dormant season burns are unlikely to have negative impacts on hibernating species.

4.2.4 Motorized Access

In order to reduce impacts to wildlife, any motorized access for the purpose of *Phragmites* control will be limited to:

- Lightweight, slow-moving vehicles (e.g. specialized Argo, Marsh Master etc.), or
- Boats

5.0 Monitoring

Between 2016 and 2020, the ministry formed partnerships with the University of Waterloo, Nature Conservancy of Canada and other conservation organizations, and created a Monitoring Plan to assess the fate of glyphosate and the surfactant in water and sediment and their dispersal from treatment sites, and potential impact to aquatic biota. These surveys found that exposure risk to aquatic life was extremely low and were well below thresholds for the protection of aquatic life, established by the Canadian Council of Ministers' of the Environment. Further, the herbicide and surfactant used degraded rapidly and did not disperse far from treatment sites (Robichaud and Rooney 2021).

Additional surveys, assessing efficacy of the herbicide treatment and changes to vegetation communities are part of long-term vegetation monitoring plots established by the University of Waterloo. These have demonstrated successful control of *Phragmites*, with reductions of 95% of live stem density, four years after herbicide treatments conducted in 2016. Additional monitoring is also documenting the recovery of native plant communities (e.g. Wild Rice, native bur reeds and pondweeds).

In 2021, the project will continue assessments of the efficacy of control efforts at established long-term vegetation plots as well as classify changes to the wetland landscape (through remote sensing) to assess creation or enhancements of fish habitats. A new component of work will further investigate the return of the native plant communities, and identify potential candidate plant species (e.g. wild rice) that can help support the further restoration of these wetland ecosystems.

6.0 Communications and Notification

Pesticide use notification plans for Long Point Region have been prepared in accordance with the requirements of the Ontario Pesticides Act, 1990.

All notification actions are designed to meet the public's general right to know about herbicide applications made to outdoor public places that are owned or controlled by public authorities, and allow members of the public to take action to avoid potential contact with herbicides, if they wish. The Ministry of Northern Development, Mines, Natural Resources and Forestry and the Ministry of the Environment, Conservation and Parks' Ontario Parks will ensure that herbicides are applied to public places in a safe, responsible manner, minimizing harm to the community and the environment.

The ministry or the Ministry of the Environment, Conservation and Parks' (for Long Point and Turkey Point Provincial Parks) will notify members of the public and the following stakeholder groups about herbicide applications made for the purpose of controlling Phragmites in aquatic areas at Long Point Region prior to the commencement of any work:

Long Point:

- Residents of Long Point
- Residents of Turkey Point
- Any resident within 800 m of a herbicide application area that may have a surface water intake
- Turkey Point Property Owners Association
- Long Point Ratepayers Association
- Boaters
- Waterfowl Hunters

- Municipality, Health Unit, Ontario Provincial Police, Fire Department, local hospitals
- Bird Studies Canada
- Turkey Point and Long Point Provincial Park staff, Day users and Campers
- Long Point Phragmites Action Alliance
- Long Point and Big Creek National Wildlife Areas – Canadian Wildlife Service Staff, and Day users

Notification arrangements have been based on an assessment of the level of usage of the areas where pesticide may be used and the extent to which activities generally undertaken in these areas could lead to the potential for contact with herbicides.

7.0 Safety

Health Canada's Pest Management Regulatory Agency (PMRA) is responsible for assessing pesticide products and approving their registration for sale and use in Canada. The emergency use registration of the herbicide for the pilot project was evaluated by PMRA, to ensure that necessary measures are in place to protect people, animals and the environment. As such, PMRA has prescribed specific conditions on the herbicide label to ensure the safety of human health and the environment.

The Ministry of Environment, Conservation and Parks (MECP) administers the *Pesticides Act* and Ontario Regulation 63/09 which provides the province's framework for regulating the sale, use, transportation, storage and disposal of federally regulated pesticides to protect human health and the natural environment. In accordance with Ontario's pesticides legislation, permit(s) are required from the MECP to use a pesticide in water, for this pilot project. Applications for a Permit to Perform a Water Extermination or Aerial Extermination are reviewed by MECP's Regional Pesticides Specialist. Permits that are issued to authorize use of the herbicide for this pilot include specific terms and conditions such as set back distances from sensitive areas, public notification requirements and other conditions to prevent impacts to human health or the environment.

The permit holder(s), responsible for the aerial and ground herbicide application are provincially licensed exterminators under the *Pesticides Act*, and are responsible for

preparing and adhering to plans to ensure the safety of applicators, the public and the environment.

Agency Notifications

Prior to commencement of the project, the local municipalities, health units, Ontario Provincial Police, fire departments and hospitals at Long Point will be notified. The local health authorities will also be provided with toxicological information about glyphosate prior to initiation of the project to ensure they are prepared to address health concerns from the public.

Local residents, park visitors, and other stakeholders will be provided with contact information for the Ministry of the Environment, Conservation and Parks' Spills Action Centre and the local Pesticide Specialist.

8.0 Contact Information

Further information on the project and herbicide use can be obtained by visiting the Long Point Phragmites Action Alliance at longpointphragmites.ca. Questions regarding the project and specific locations can be directed to the following contacts:

Long Point Crown Marsh

Anyone wishing to contact the Ministry of Northern Development, Mines, Natural Resources and Forestry to obtain details of the 2021 Phragmites Control Project at Long Point Crown Marsh should contact;

Resource Management Coordinator - Aylmer District Office:

Phone: 519-773-9241 Email: MNRF.AYL@ontario.ca

Long Point and Turkey Point Provincial Parks

Anyone wishing to contact Ontario Parks to discuss the plan or to obtain details of the 2020 Phragmites Control Project should contact:

Jeff Pickersgill, Park Superintendent

Phone: 519-426-3239 ext. 101

Email: jeffery.pickersgill@ontario.ca

Long Point Privately-owned Marshes

Anyone wishing to contact the Nature Conservancy of Canada to discuss the details of the 2020 Phragmites Control Project should contact:

Brett Norman - Invasive Species Program Manager

Phone: 226-231-0331

Email: brett.norman@natureconservancy.ca

9.0 Mapping

9.1 Long Point Region

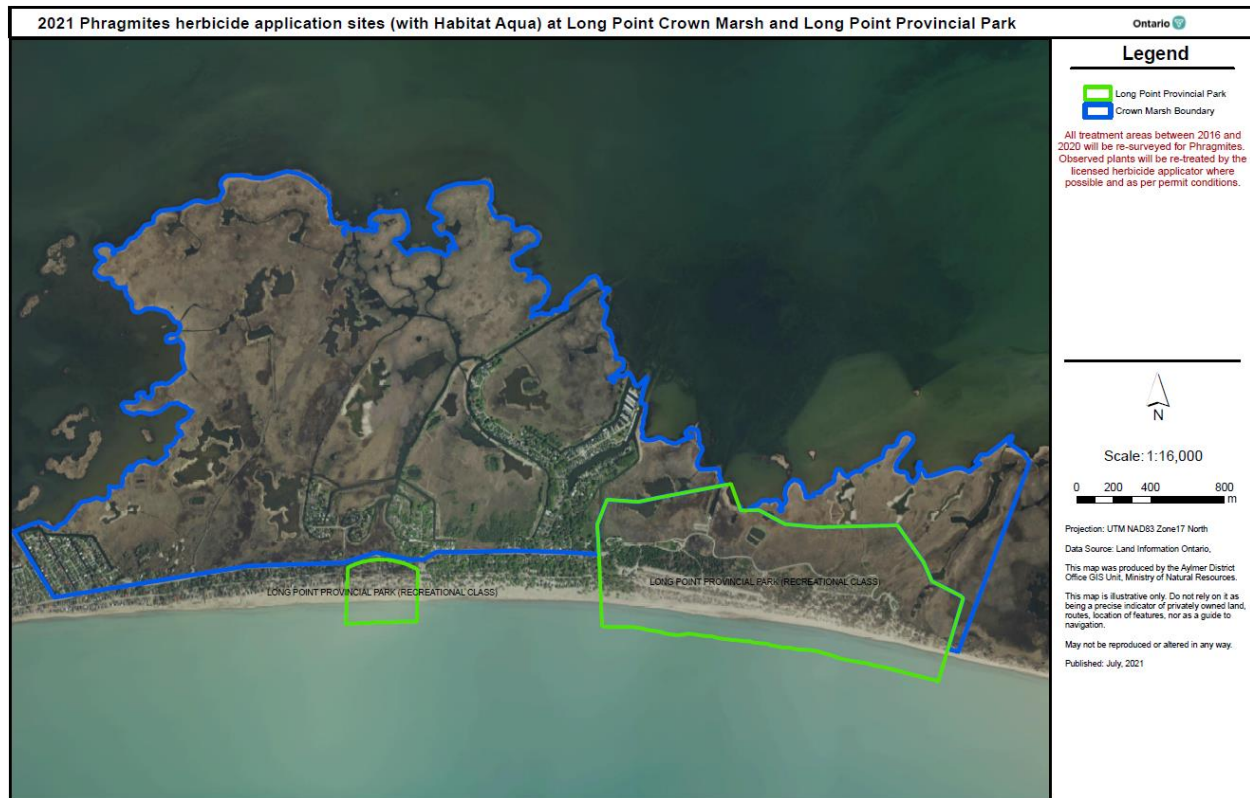
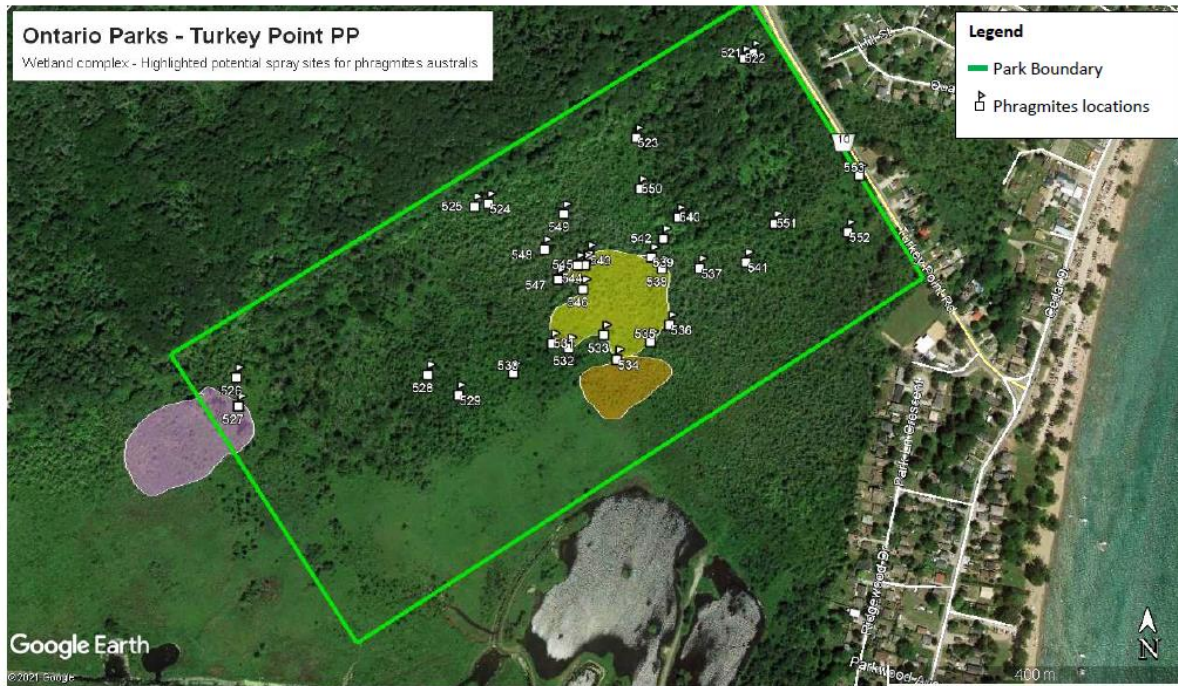


Figure 1: Proposed retreatment areas at Long Point Crown Marsh (<10ha) and Long Point Provincial Park, 2021 (<10ha).



Figure 2: Proposed retreatment areas including Long Point Company, Gravelly Bay and Long Point Tip (2021).



Locations of *Phragmites* within Turkey Point Provincial Park. The table below lists the areas on the map that are proposed for aquatic ground application with Habitat Aqua. Other numbered locations on the map depict additional locations where *Phragmites* occurs (including the purple and yellow-green polygons) but are not proposed for treatment under this application, and include dry terrestrial areas, and some aquatic areas where use of Habitat Aqua is not proposed.

Location Number	Phragmites Treatment Area (m ²)	Approximate Patch Dimensions (m)	Phragmites density	Equipment
524	9	3x3	Sparse	Backpack sprayer
525	400	20x20	Sparse	Backpack sprayer

Figure 3: Proposed new and retreatment areas at Turkey Point Provincial Park in 2021(<3ha)

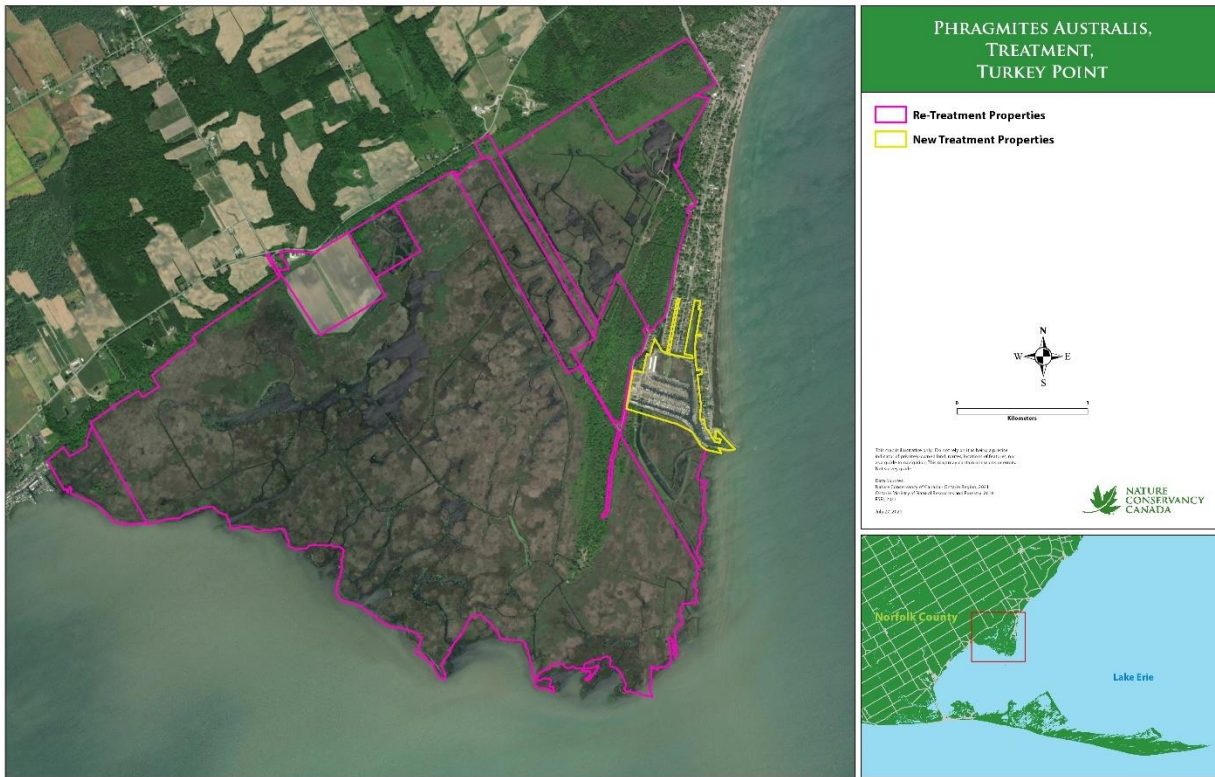


Figure 4: Proposed new and retreatment areas at Turkey Point Wetland Complex in 2021(<14ha) by the Nature Conservancy of Canada.



Figure 5: Proposed retreatment areas along North Shore of Inner Bay in 2021(<1ha) by the Nature Conservancy of Canada.

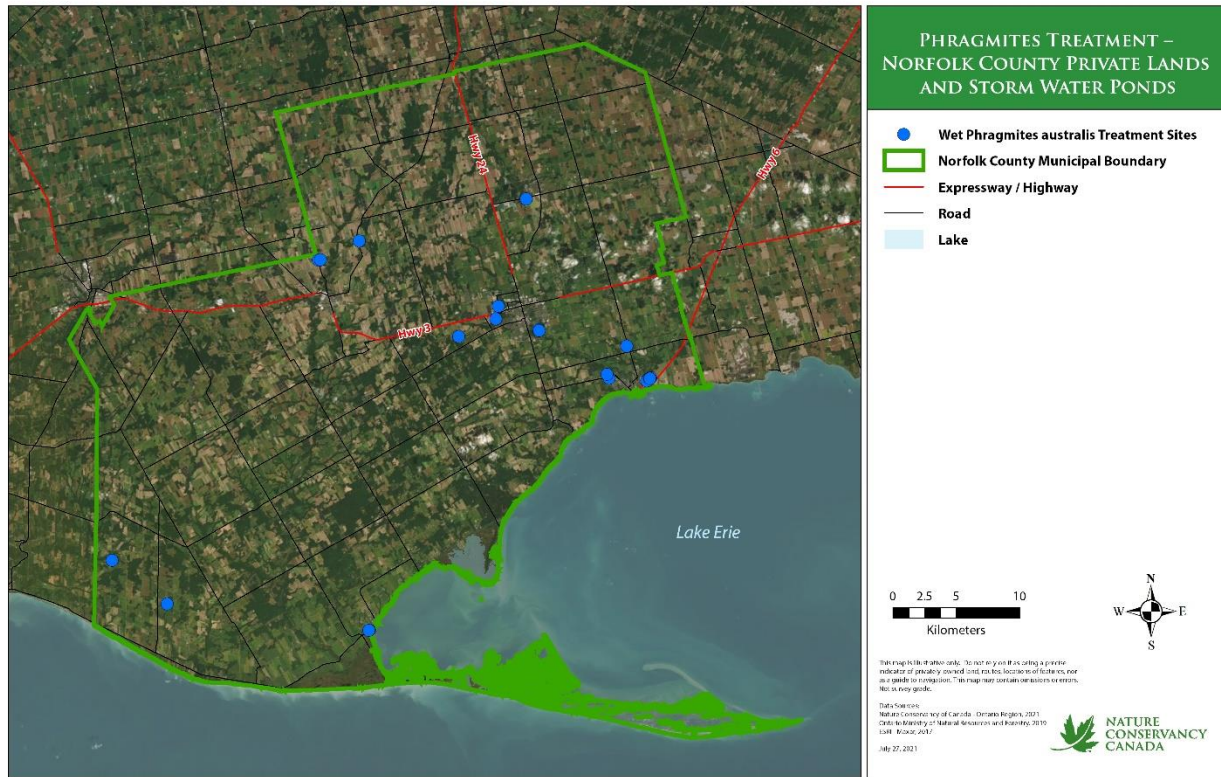


Figure 6: Proposed new treatment sites within Norfolk County 2021(<2ha) by the Nature Conservancy of Canada.