Invasive Phragmites Control at Long Point Region and Rondeau Provincial Park

Implementation Plan

Ministry of Natural Resources and Forestry
Natural Resources Conservation Policy Branch, Natural Heritage Section
Southern Region, Aylmer District
Ontario Parks, Southwest Zone

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Ontario

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1.0 Background Information

1.1 Phragmites and the 2018 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 Natural Resources and Forestry (`the ministry`) has recognized Phragmites as a significant threat to biodiversity and Species at Risk at Long Point and Rondeau 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 continued and exponential growth of Phragmites in wet areas in Rondeau Provincial Park and the Long Point region (includes Long Point, Turkey Point and lower Big Creek Watershed), the ministry has been approved by Health Canada's Pest Management Regulatory Agency for an Emergency Registration as a pilot project to allow for aerial and ground application of an herbicide (active ingredient glyphosate) in wet areas. In 2016 and 2017, aerial herbicide application by helicopter was the primary method of application to access the remote and sensitive terrain at the majority of sites at Rondeau and Long Point. Aerial application was the most efficient method of treating large infestations far from roads, trails, and on otherwise un-drivable terrain. In 2018, the ministry has been approved by the Pest Management Regulatory Agency to continue the pilot project at Rondeau Provincial Park and the Long Point region.

As a result of successful treatments in 2016 and 2017, the focus of the pilot program in 2018 will be on follow-up ground herbicide applications to address regrowth, and small populations that have not yet been treated. Ground application is better suited to address low density Phragmites stands. An aerial program is proposed in only a few

areas that have not yet been treated, including portions of the Long Point Crown Marsh and Turkey Point wetland complex. Implementation of this year's pilot project is scheduled to occur between August 15 and October 31, 2018.

2.0 Purpose and Rationale

The purpose of this project is to control invasive Phragmites in Rondeau Provincial Park and the Long Point Region in order to reduce or remove the threat to the biodiversity and ecological integrity of these areas. The tools and techniques used will be applied based on best available information, which are summarized within the document *Invasive Phragmites – Best Management Practices* (MNRF 2011) and based on the experience of project staff from the ministry and the Nature Conservancy of Canada.

The initiation and continuation of this pilot project at Rondeau and Long Point 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 have advised that the health of these coastal marshes is at a critical tipping point. If action is not taken to control Phragmites, the provincial, national and global significant values for which these areas are recognized will be permanently lost. Due to the aggressive nature of the invasive plant, if efforts to eradicate are not continued in 2018 the plant will recolonize in areas previously treated.

Phragmites threatens both the ecological and recreational importance of the Rondeau Bay and 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 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 has been 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. Following a successful Emergency Registration in 2016 and 2017, the ministry has received approval from the Pest Management Regulatory Agency in 2018 to continue the use of an herbicide in wetland areas of Long Point Bay and Rondeau Provincial Park. The basis of the emergency is due to the imminent threat that Phragmites poses to species at risk within these sensitive wetland complexes. If control is not continued, these species are at imminent risk of extirpation at these sites.

The herbicide is approved for aquatic use in the United States (the U.S.) by the Environmental Protection Agency, and is considered to be environmentally safe and extremely effective in coastal wetland restoration efforts. It has been used successfully by several U.S. states for controlling Phragmites in coastal wetland areas in the Lake Erie basin.

This pilot project will build upon previous and on-going Phragmites control efforts that have been undertaken in both regions.

2.1 Rondeau Provincial Park

The colonization and expansion of Phragmites in the wetland habitats at Rondeau Provincial Park is a significant threat because these wetlands are recognized globally, nationally and provincially as important areas for biodiversity. Rondeau is ranked as a provincially-significant Life Science Area of Natural and Scientific Interest and a Provincially Significant Wetland. It is also a globally significant Important Bird Area for congregatory species, as well as for waterfowl and migratory land bird concentrations. The variety of habitats within this Important Bird Area contributes to significant bird diversity. Every year, thousands of migrating waterfowl use the area as a stopover and rest point during their travels. The Rondeau Bay wetlands are also home to 17 species on the Species at Risk in Ontario List, which are dependent on the wetland to fulfill one or more of their life functions (e.g. breeding, hibernation, birthing, foraging, etc.).

The threat from Phragmites encroachment and dominance within the Rondeau wetlands also impacts tourism, socio-economic values for the area, and recreational opportunities

that are well known to anglers, naturalists, vacationers, and waterfowl hunters, resulting in reductions in aesthetic view-scapes, and increased difficulties for boat launching and shoreline recreational fishing. Rondeau Bay is also a critical area for fish that are harvested through the commercial fisheries on Lake Erie, which is a multi-million dollar industry that stands to be significantly impacted by Phragmites encroachment in shallow waters targeted by many fish species as spawning and nursery areas.

2.2 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 Natural Resources and Forestry has 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).

In 2015, ministry staff completed project requirements under both the Ministry of 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. Ministry 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, 2018, the ministry in collaboration with 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 (MECP) through their Permit(s) to Perform an Aquatic Extermination. The Nature Conservancy of Canada is the leading partner on this project in terms of coordination and treatment of Phragmites on private lands. The project may also undertake a fish monitoring plan, as per conditions prescribed by Fisheries and Oceans Canada.

Herbicides will be primarily applied by ground methods. Aerial application of the herbicide by helicopter may be necessary to address some small populations occurring in remote and sensitive terrain at Turkey Point and Long Point. It can be used safely and is the most effective method of treating infestations far from roads, and trails, and on otherwise un-drivable terrain. It should be noted that the herbicide is applied directly to the dense canopy of Phragmites, and that herbicide will not be sprayed in open water areas.

Work related to the 2018 pilot project for control of Phragmites at Rondeau Provincial Park will occur within the regulated park boundary. Ground herbicide application may occur in any of the areas identified in Figure 1.

Ground herbicide application will be the primary method of control within the Long Point Region and the areas proposed for treatment are outlined below. Aerial application of

herbicide may occur as a complementary activity to ground application at Long Point Crown Marsh, Turkey Point Wetland Complex, and Long Point Company.

- Long Point Crown Marsh and Long Point Tip (Crown Lands) (Figures 2 and 3)
- Long Point Company (Private lands) (Figure 4)
- Turkey Point Wetland Complex (Private lands) (Figure 5)
- Lower Big Creek Watershed (Figure 6)
- Gravelly Bay within Long Point (private lands) (Figure 7)
- Ordnance Beach at Turkey Point Provincial Park (Figure 8)

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 then 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 (Roundup® Custom For Aquatic & Terrestrial Use Liquid Herbicide, Registration Number 32356 Pest Control Products Act; active ingredient glyphosate) 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 to areas dominated by dense stands of Phragmites 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

In order to avoid impacts to recreational hunting within regulated waterfowl hunting units, herbicide application will be completed sometime between September 1st and October 31, 2018 outside of regulated hunting days for Rondeau Provincial Park.

For Long Point Crown Marsh and Long Point Tip ground herbicide application may occur any time between August 15th – October 31st, 2018; however, the majority of ground treatment will most likely occur by the end of September in order to retain the integrity of project monitoring. Aerial herbicide application is targeted to occur outside of regulated hunting days between September 4th and October 15th.

Operations in the private lands of Turkey Point, Lower Big Creek and Long Point may occur between August 15th and October 31st. Hunting season for waterfowl opens on September 22nd, and aerial treatment, if undertaken, will most likely be completed by this date.

Turkey Point Provincial Park will be completed following completion of all other treatments. This is likely to occur toward the end of the treatment window, which will reduce the impact to park users.

This timing window is 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 Prescribed Burning Timing

Prescribed burns for Phragmites are typically undertaken between November 1st, 2018 and March 31st, 2019. The ministry and partners will aim to burn the treated sites during this timing window, unless new information comes forward indicating that an alternate burning window is more effective and will not result in impacts to non-target plants and wildlife. 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

Although the pilot project's proposed use of herbicide containing glyphosate in aquatic habitats for control of Phragmites is not unique in the United States, this is the first time that a project of this size and scope has been undertaken in Canada. As such, it is important to monitor and document the results of this pilot project to inform similar control initiatives in the future within Ontario, and Canada. The ministry has formed partnerships with the University of Waterloo and other conservation organizations, and created a Monitoring Plan to assess the following:

1. Efficacy of the herbicide treatment – continuation of surveys of vegetation plots established in 2016 to assess changes in the vegetation communities as a result of the project;
2. Effects of the control activity on sensitive emergent coastal marsh vegetation communities, including benthic invertebrates;
3. Fate of glyphosate, AMPA and the adjuvant in water and sediment at treatment sites, and their dispersal from treatment sites;

4. Assessment of risks of the herbicide application to biofilms and the wetland food-web (including amphibians);
5. Impacts of the control activity on fish pre and post treatment; and
6. Surface water samples from shoreline residences adjacent to treatment areas at Lower Big Creek, Turkey Point, and Long Point will also be analyzed to determine glyphosate presence and/or concentration.

6.0 Communications and Notification

Pesticide use notification plans for Rondeau Provincial Park and 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 Natural Resources and Forestry will ensure that herbicides are applied to public places in a safe, responsible manner, minimizing harm to the community and the environment.

The ministry 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 Rondeau Provincial Park and 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
- Turkey Point Phragmites Action Alliance

Rondeau:

- Campers
- Park Day Users
- Cottage Leaseholders and Other Tenure Holders
- Park Staff
- Friends of Rondeau
- Boaters (including the Rondeau Yacht Club)
- Waterfowl Hunters
- Municipality, Health Unit, Ontario Provincial Police, Chatham-Kent Police Service, Fire Department

Notification arrangements have been based on the ministry's 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 for the ministry's use of the herbicide 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 authorise 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 Rondeau and 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 Environment, Conservation and Parks' Spills Action Centre and the local Pesticide Specialist.

8.0 Contact Information

For more information about this project, please contact:

Rondeau Provincial Park:

Brad Connor, Rondeau Provincial Park Superintendent

Phone: 519-674-1760

Email: brad.connor@ontario.ca

Long Point:

Project Supervisor, Aylmer District

Phone: 519-670-3834

Email: longpointphragproject@ontario.ca

Turkey Point Provincial Park

Jeffrey Pickersgill, Park Superintendent

Phone: 519-426-7138 x227

Email: Jeffrey.pickersgill@ontario.ca

9.0 Mapping

9.1 Rondeau Provincial Park

Proposed Ground Treatment Sites

Figure 1: A map of Rondeau Provincial Park depicting proposed ground herbicide treatment sites for 2018 (up to 20ha) with the addition of a 45 metre buffer to mitigate impacts to non-target vegetation.

9.2 Long Point Region

Proposed Ground Treatment Sites at Long Point Crown Marsh

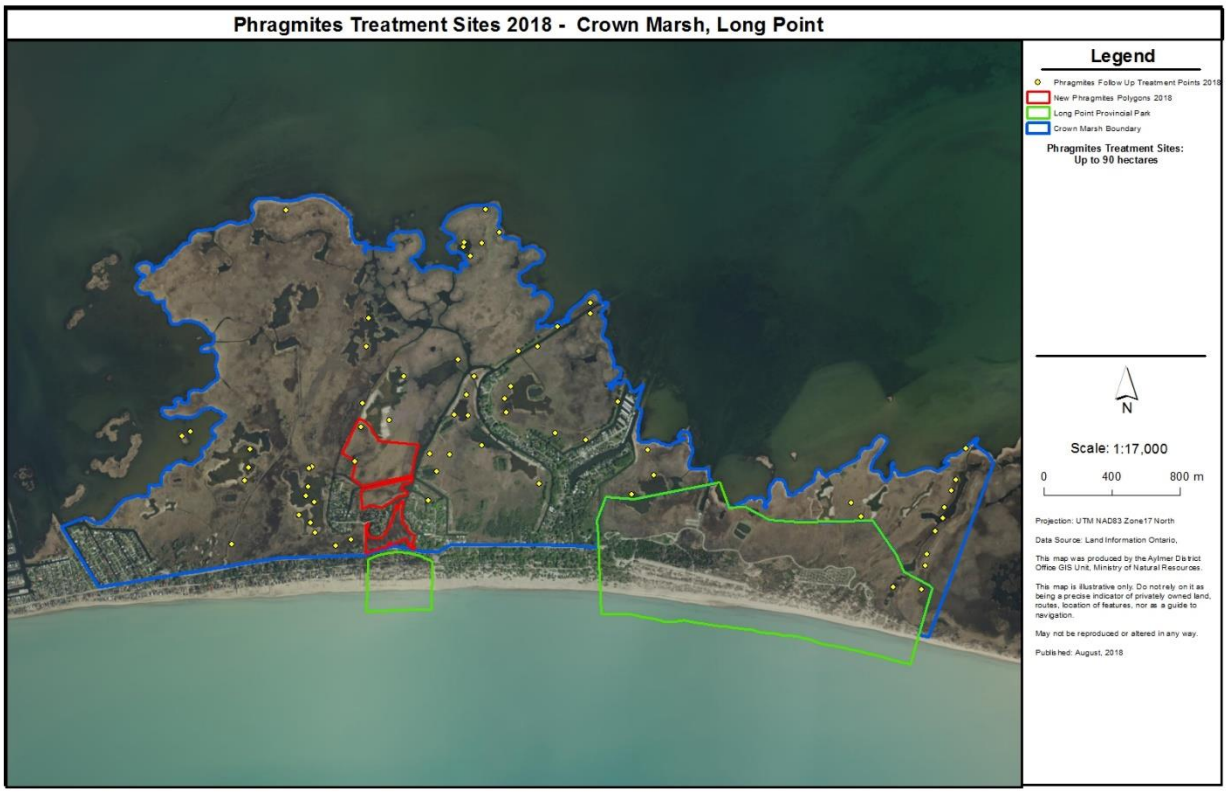

Figure 2: A map of Long Point Crown Marsh and Long Point Provincial Park depicting ground herbicide treatment sites for 2018. Aerial treatment may occur in the follow up treatment sites (approximately 5ha).

Proposed Ground Treatment Sites at Long Point Tip

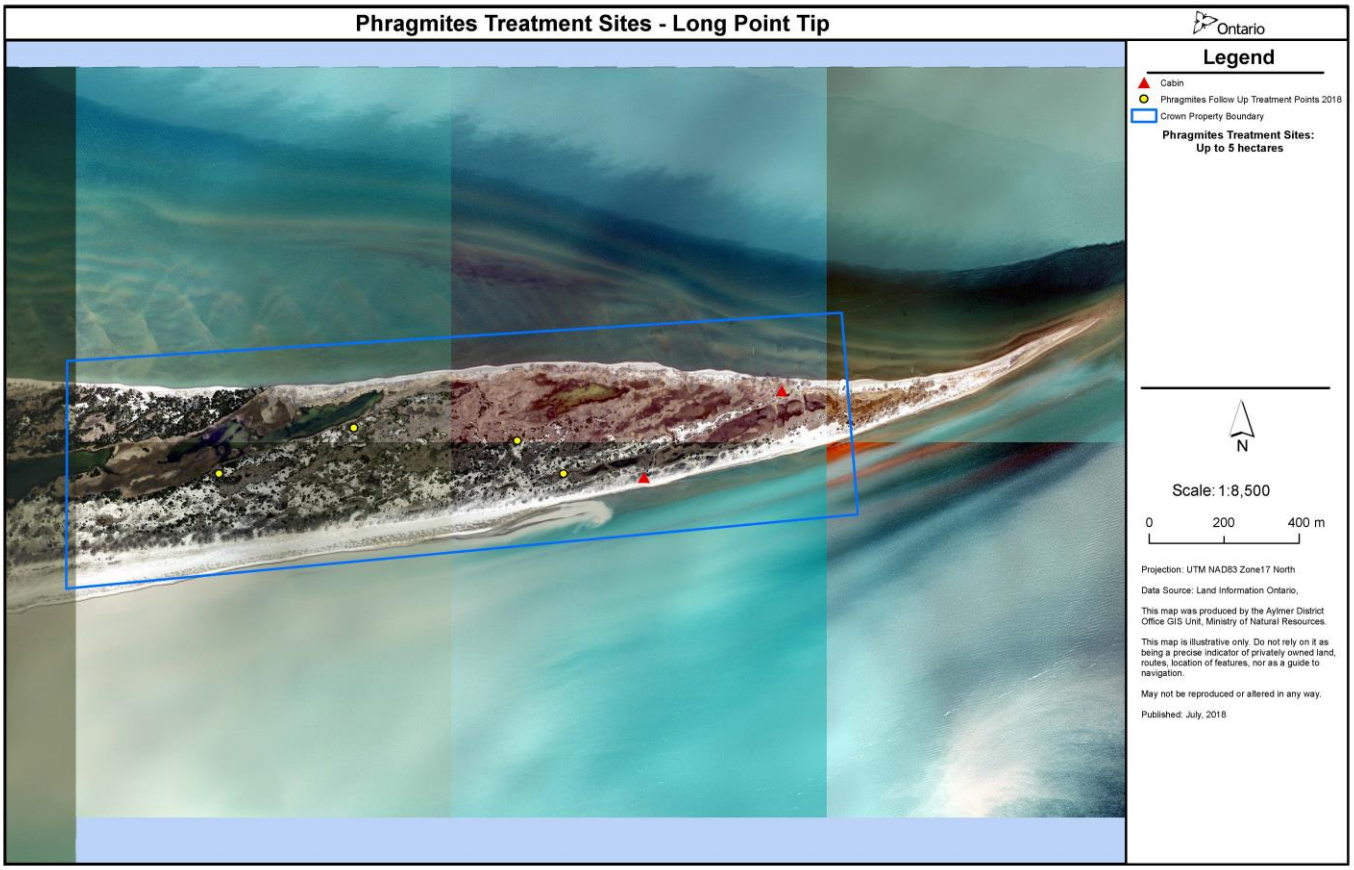

Figure 3: A map of Long Point Tip depicting ground herbicide treatment sites for 2018.

Proposed Ground Treatment Sites at Long Point Company

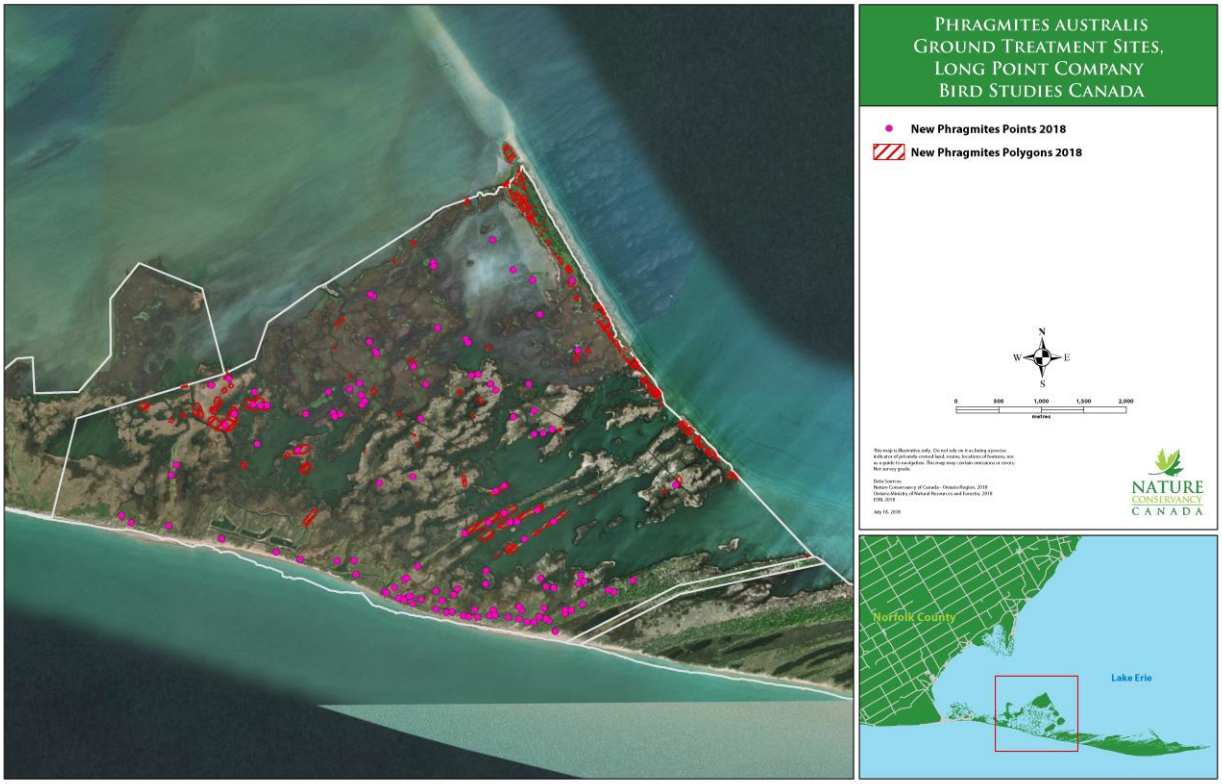

Figure 4: A map of Long Point Company depicting ground herbicide treatment sites for 2018. Aerial treatment may occur at a small proportion of these sites.

Proposed Ground Treatment Sites at Turkey Point Private Lands

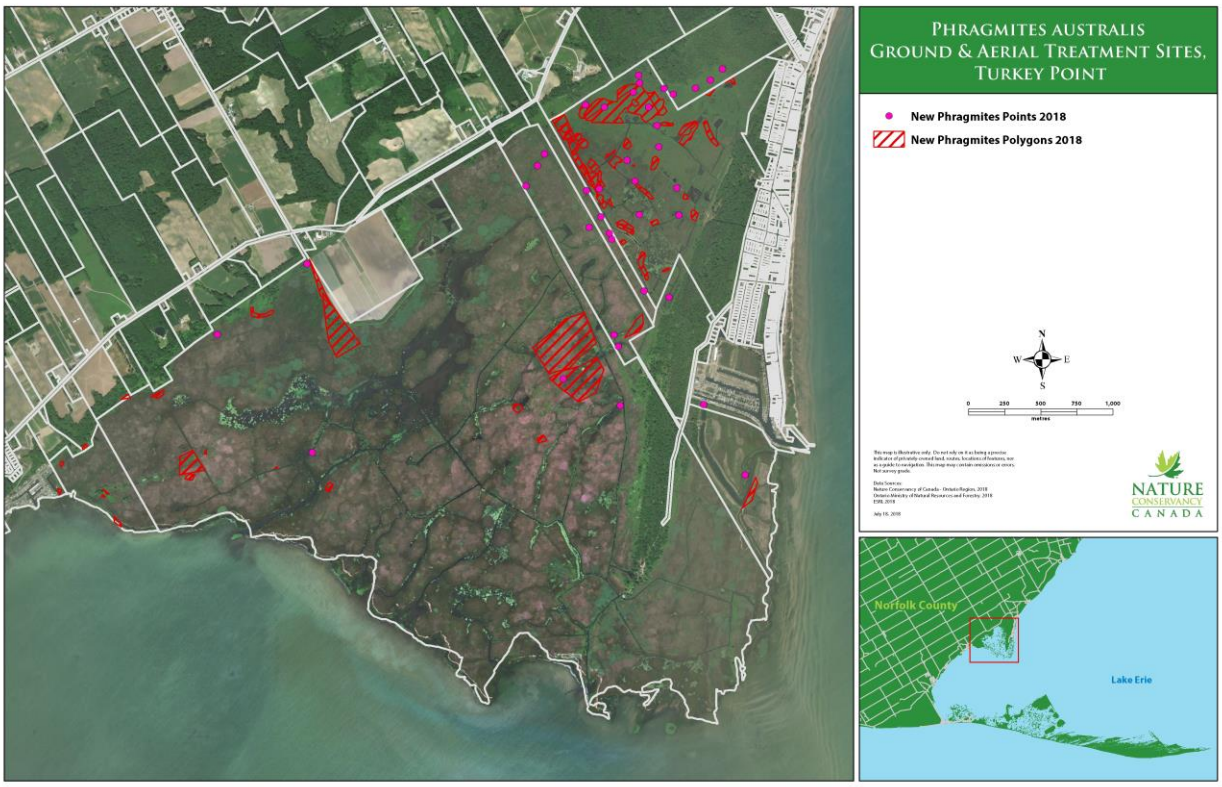

Figure 5: A map of lands in the Turkey Point area depicting ground treatment sites for 2018. Aerial treatment may occur at a small proportion of these sites.

Proposed Ground Treatment Sites at Lower Big Creek

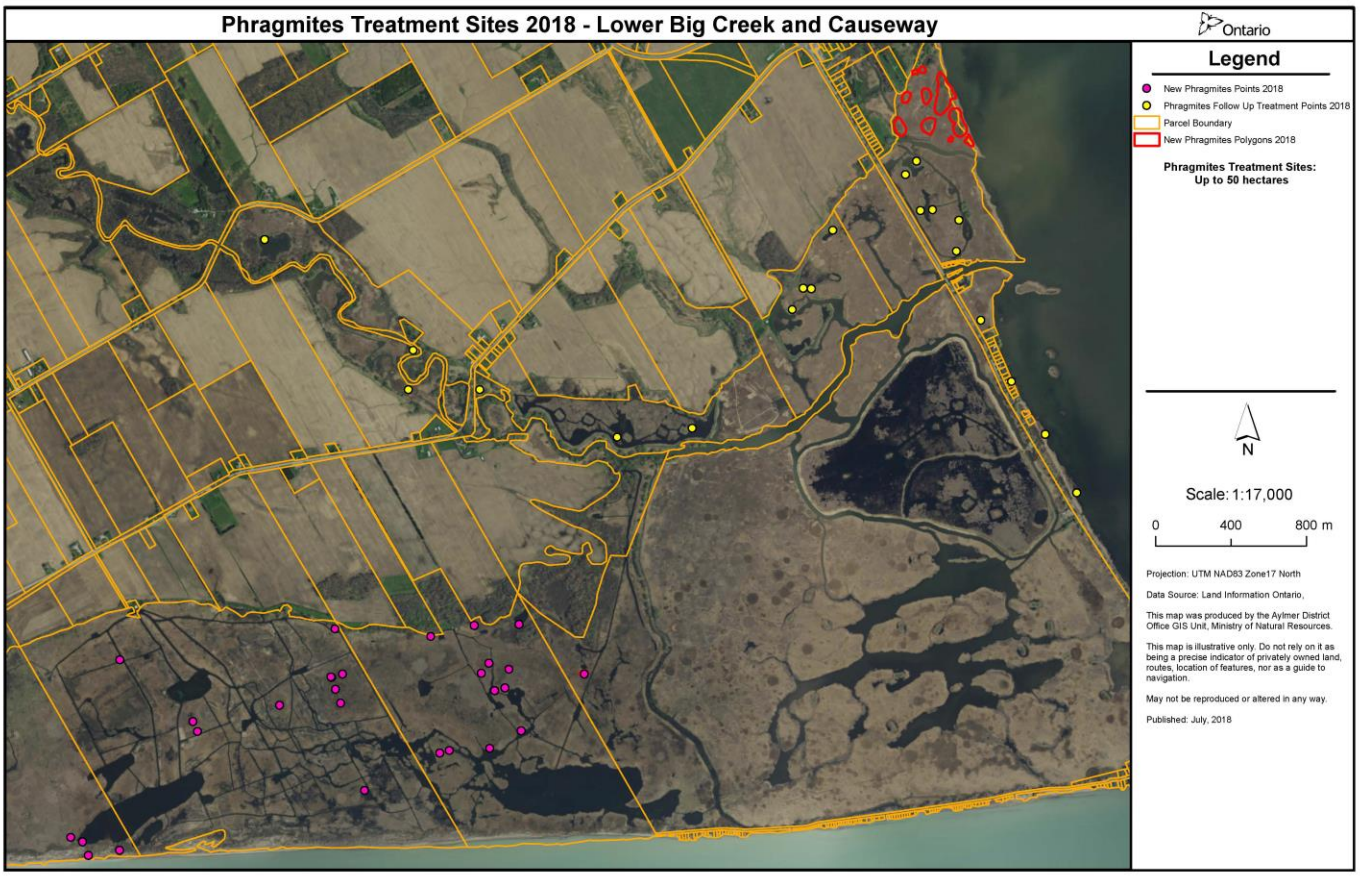

Figure 6: A map of lands in the Lower Big Creek area depicting ground treatment sites for 2018. Aerial treatment may occur at a small proportion of these sites.

Proposed Ground Treatment Sites at Gravelly Bay.

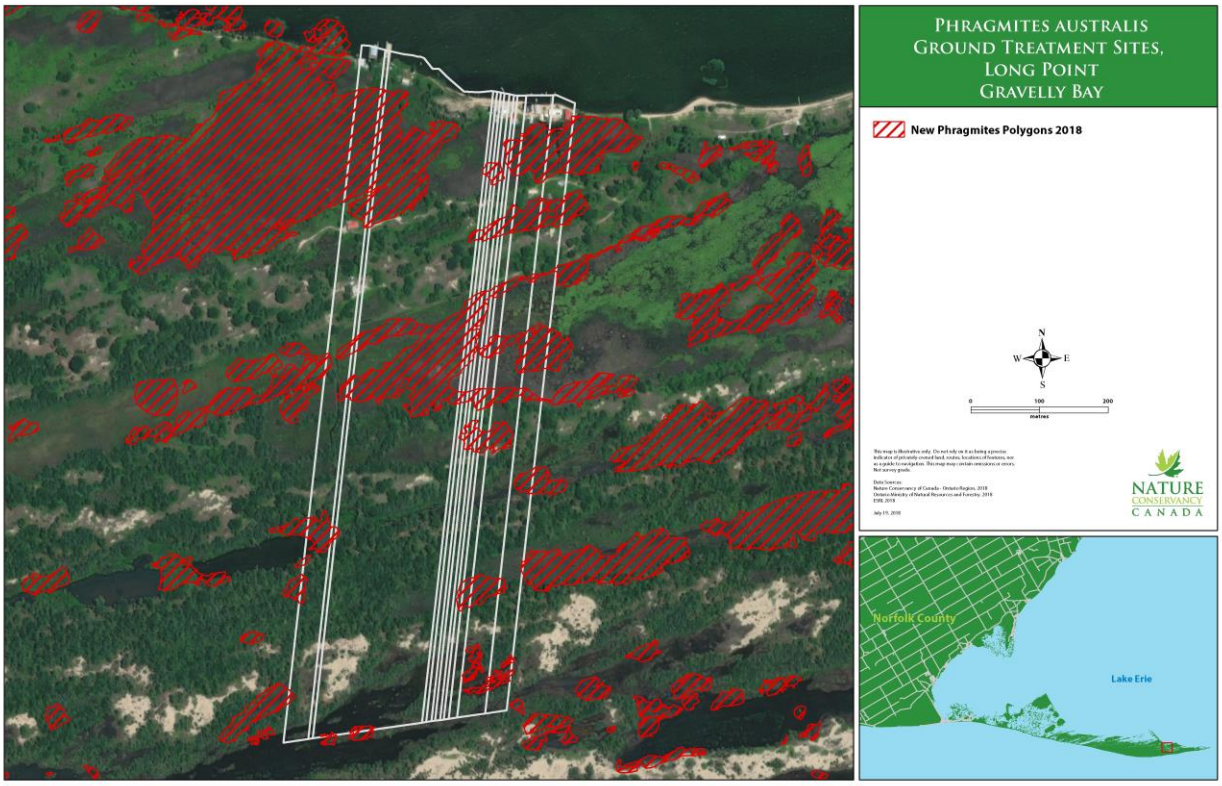

Figure 7: A map of Gravelly Bay depicting ground treatment sites for 2018.

Proposed Ground Treatment Sites at Ordnance Beach, Turkey Point Provincial Park

Figure 8: A map of Ordnance Beach depicting ground treatment sites for 2018.