

# Habitat Management Plan

## Invasive Plant Management Project

Shriver Property  
12 Boulder Glen Rd.  
Hingham, MA 02043

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prepared by

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## **Site Conditions**

Non-native invasive plant management of common reed (*Phragmites australis*) is proposed on the property of Tracy Shriver in Hingham, MA. Jessica Applin of Land Stewardship, Inc. visited the property on September 17, 2019 to evaluate conditions at the site. The project area measures approximately 4,500 square feet. (with the addition of adjoining phragmites on abutting property, the total square feet are 9,824.) This patch of phragmites is a monoculture, with no natives growing within the area the phragmites occupies. The area directly to the east of the phragmites is populated with salt marsh grass species. Our experience with projects similar to this one indicates that these and other salt marsh native species will become re-established once the phragmites is managed and controlled.

The entirety of the project area is classified as a salt marsh through the Department of Environmental Protection. Most of the project area, except for the southernmost section, is also classified as Priority Habitat under the Natural Heritage Endangered Species Program (NHESP). Priority Habitat is defined as the known extent of habitat for all state listed rare species, both plants and animals that are listed under the Massachusetts Endangered Species Act (MESA). A map of the project area including the resources described above may be found in Appendix A.

## **Permitting, NHESP and DMF Approval**

This project falls under the jurisdiction of the Wetlands Protection Act (WPA). Therefore, a Notice of Intent (NOI) will be filed with the Hingham Conservation Commission (the Commission) and with the Massachusetts Department of Environmental Protection (DEP). We will produce a management plan, resource map and proposed methods of treatment as support documentation for the permitting process

Since this project is also classified as Priority Habitat by the Natural Heritage Endangered Species Project (NHESP), their approval and input will also be necessary for the permitting process. We will provide the appropriate maps and proposed treatment methods for NHESP to review prior to permitting.

Depending on the rare species habitat that is represented on site, proposed treatment methods or timing of methods may need to be shifted, or the presence of a botanist or specialist may be required. If the Order of Conditions issued by the Conservation Commission includes any significant changes, treatment methods and sequence may also require a revision.

The project area is in an area mapped as habitat for shellfish. If the project involves any work on the tidal flats, Massachusetts Department of Marine Fisheries will need to review the Notice of Intent.

## Methods Summary

### *Mowing*

Phragmites will be mowed using a walk-behind low-ground-pressure mower (Figure 1). Mowed plant debris will remain on the site. All equipment will be cleaned following any work at the sites. Specifications for this mower can be found at <https://www.drpower.com/Power-Equipment/Field-%26-Brush-Mowers/Walk-Behind/DR-Field-and-Brush-Mower/p/AT47134BEN>



**Figure 1.** Low ground-pressure walk-behind mower

### *Herbicide Selection*

Only wetland-appropriate herbicides suitable for use in sensitive natural areas will be used in the lowest effective concentrations.

The herbicide Rodeo (EPA Reg. No. 62719-324) will be used for all herbicide applications. Rodeo is a wetland-approved glyphosate-based herbicide that is considered the standard for successful phragmites control and protection of wetland resource areas. In addition, a wetland approved non-ionic surfactant will be mixed into the herbicide solution along with indicator dye.

### *Foliar spray application (backpack sprayers)*

LSI crew will conduct a limited foliar spray herbicide application using hand-pumped backpack sprayers in areas where phragmites is the only plant growing and no native plants will be impacted. Foliar treatments are applied in a targeted manner by trained ecological restoration technicians during appropriate weather conditions (wind <5 mph and no rain forecast within 24 hours, in accordance with product labeling).

### *Targeted Herbicide Application Methods for Common Reed/Phragmites*

We use targeted methods to ensure that herbicide is applied carefully only to phragmites. A brief description of each method may be found below. Treatment of phragmites will be conducted only at low tide.

### *Cut and drip method*

Each stem is cut below a node on the stem. One drop of a solution of Rodeo herbicide with water and indicator dye is dripped into each stem. This technique is typically used within a three-foot perimeter where phragmites is growing directly adjacent to native species. A 50% Rodeo solution (v/v) will be used.

### *Glove technique (hand wiping)*

To conduct the glove technique, an herbicide applicator wears a chemical resistant glove underneath an absorbent cotton glove. The applicator moistens the glove with herbicide from hand-pumped low-volume backpack sprayer equipped with specialized ultra-low-volume nozzles backpack sprayer into the glove, and then wipes the stem and leaves of the individual phragmites plants. A 5% Rodeo solution (v/v) will be used along with 0.5% wetland surfactant.

## **Restoration Planting**

Passive regeneration of site-specific plant species in the intertidal zone will proceed once the overstory of phragmites is removed.

Native plant reestablishment will be carefully monitored once the initial foliar treatment has been completed. Particular attention will be paid to the upper limit of the phragmites. The status of native plant restoration will be included in the annual report submitted to the Commission. After two full growing seasons, the progress of native plant restoration will be assessed to determine if a planting plan will be need to be drawn up and implemented. Only site-appropriate species will be planted. Reference ecosystems will be assessed when drawing up the planting plan to assist in the selection of plant species.

Once a plan has been approved, we will provide the landowner with a cost estimate for work associated with this task.

Follow-up phragmites management work around any restoration plantings will be restricted to manual techniques.

## **Treatment Schedule**

*2019/2020*

- Permitting. We will provide a management plan with maps as a support document for the permitting process. We will not conduct a formal wetlands delineation of the area but will include the DEP wetlands overlay on GIS maps that will accompany the plan as well as the plan you have already supplied, with the expectation that this will be sufficient for the conservation commission. We will also request treatment

permission on behalf of the landowner from The Natural Heritage and Endangered Species Program (NHESP) since part of the subject property is classified as Priority Habitat. The notice of intent process can be a time consuming one that requires attendance at conservation commission meetings.

## 2020

- Task 1. Mowing. Spring. Mowing of all phragmites in the project area in preparation for foliar treatment in Spring 2020. Mowing will be done with a low-ground-pressure mower that will cut the phragmites low, mulching the stems.
- Task 2. Initial foliar treatment. Early Summer 2020. Initial foliar treatment to all phragmites within the project area. Timing based on re-growth in order to ensure optimal height for treatment.
- Task 3. Follow-up foliar treatment. Late Summer/Early Fall 2020. Follow-up foliar to any resurgent phragmites growth within the project area. Hand-wiping to isolated stems and those in proximity to limits of project area, and/or in proximity to desirable returning plant species.
- Task 4. Mowing. Late Fall/Dormant season. Mowing of treated phragmites to allow native plants the opportunity and resources to recolonize the area. Mowing will be done with a low-ground-pressure mower that will cut the phragmites low to the ground and will mulch the stems.

## 2021

- Task 5. Follow-up foliar treatment. Summer 2021. Follow-up spot foliar treatment to any new phragmites growth within the project area. Hand-wiping to isolated stems and those in proximity to limits of project area, and/or in proximity to desirable returning plant species.

## 2022

- Task 6. Follow-up foliar treatment. Summer 2022. Follow-up spot foliar to any new phragmites growth within the project area. Hand-wiping to isolated stems and those in proximity to limits of project area, and/or in proximity to desirable returning plant species.

## **Monitoring**

Objective: 80% (or better) phragmites control resulting from 2020 series of treatments; 90% resulting from 2021 follow-up methods; and 95% control from 2022 follow-up. Our work is guaranteed to meet the stated success criteria. We will establish semi-permanent photo monitoring points in the project area to capture pre- and post-treatment conditions.

## **Restoration planting**

It has been our experience that native plant reestablishment commences once a monoculture of phragmites has been removed from a site. LSI will monitor the relative densities of both phragmites and native plants over the three-year course of management activities.

After the final year of treatments in 2022, our monitoring records will help to determine the density of desirable native species restoration. If native species have not reestablished at sufficient densities, we will prepare a restoration planting plan using reference ecosystem in the adjacent marsh to the project area for guidance.

The final restoration planting plan will be subject to review and approval by the Commission.

## **Notifications and Reporting**

Prior to the start of phragmites control work, a meeting will be held on-site with the Hingham Conservation Commission and/or its representatives. LIS will provide one week's notice before this meeting is planned.

The Commission will be notified 48 hours before any subsequent work occurs at the site.

Upon completion of each task, a land management record will be prepared to summarize work completed each day (crew, weather, hours worked, herbicide used, herbicide amount and notes). A GIS aerial map will accompany the land management record to show areas worked for each task performed.

An annual report documenting work completed at the Shriver project site will be submitted to the Commission. Monitoring data will be collected in September. The annual report will be submitted to the Commission by December 31 of each of three years.

A final report will be submitted upon completion of Task 6 follow-up work in 2022. This final report will be submitted by December 31, 2022.

## **Quality Assurance**

Jessica Applin will serve as the project manager for the project and will inspect all crew work firsthand to ensure that the treatment was well executed, thorough and effective. LSI will keep in close contact with the landowner regarding work schedule and progress. Crew leaders use smart phones to submit daily work logs with photos and GPS data to document areas completed.

## **Stewardship & Maintenance**

Phragmites management requires a serious commitment and will need to be ongoing in order to protect your investment in management. To keep the phragmites out of the area for the long term it will be necessary to watch the area closely by scouting for new patches and individual plants, even after the 3 years of treatment. Options for managing phragmites after the initial three years usually consist of hand pulling, spot herbicide spraying, and/or cutting. LSI can either continue the maintenance work for a reasonable annual cost or can provide training and guidance to the landowner to allow the process to be continued.

We will provide a certificate of insurance upon request.

The costs and terms represented in this proposal are valid for 30 days. After 30 days, LSI cannot guarantee that there will be space in our schedule, or that rates will not be subject to change.

LSI employs a crew of ecological restoration technicians who are thoroughly trained in invasive and native plant identification. Many crew members have, at a minimum, an undergraduate education in a natural resource field and/or significant experiential education in the field (horticulture, landscape management, arboriculture or agriculture). Crew members are all Massachusetts licensed pesticide applicators and have obtained or are working to obtain certificates in Invasive Plant Management through UMASS Extension.

**Appendix A:** Approximate extent of phragmites proposed for treatment, Shriver and Clougherty properties, Hingham, MA.

