

**2014 Year-End Report**

**Hidden Lake**

**Higganum, Connecticut**

Lycott Environmental, Inc. (Lycott) was contracted (Contract # 180-14) by Hidden Lake Association to conduct an aquatic plant management program to manage invasive and nuisance aquatic vegetation species; *Phragmites australis* (*P. australis*, Common Reed) in Hidden Lake over a two-year period (2014 - 2015). In accordance with this contract, the following document serves as a year-end report to summarize the tasks completed in 2014. These tasks included a pre-management survey, obtaining a 'Permit to Apply Pesticides to State Waters' from Connecticut Department of Energy and Environmental Protection (CTDEEP), conducting an aquatic plant management program, and completing a year-end report.



**Pre-Management Survey**

On September 19, 2014, a Lycott biologist/applicator conducted a pre-management survey at Hidden Lake. The purpose of this survey was to document the distributions and densities of aquatic vegetation within Hidden Lake and to assess the best method of treatment. Results of this survey were: trace to dense density of *P. australis* observed scattered in clusters along the shoreline. A brief summary of these results pertaining to extents and abundance of target species *P. australis* is provided below:

Target Species	Generalized Extent	Generalized Density
<i>P. australis</i>	Shoreline	Trace to Dense

**Permit Information**

The following table details the permitting activities that were required and undertaken by Lycott prior to the 2014 herbicide applications.

Date	Task
May 8 <sup>th</sup>	Submitted 'Permit to Apply Pesticides to State Waters' to Connecticut Department of Energy and Environmental Protection (CTDEEP)
July 3 <sup>rd</sup>	Received 'Permit to Apply Pesticides to State Waters' from Connecticut Department of Energy and Environmental Protection (CTDEEP)

## Treatment Notifications

Lycott provided notifications to Hidden Lake Association via fax and email, respectively, at least 48 hours prior to each herbicide application (dates listed in table below).

## Herbicide Applications

A total of one treatment event occurred over the course of the 2014 management season to manage *P. australis* in Hidden Lake, seen in **Image 1**. Information pertaining to these treatment events, including notification and treatment dates, herbicide product used, and amount of herbicide applied is provided in the following table.



Image 1: *P. australis*

Notification Date	Treatment Date	Herbicide Product (active ingredient)	Amount of Herbicide Used
September 9 <sup>th</sup>	September 19 <sup>th</sup>	Aquapro® (Glyphosate)	128 ounces

## Conclusion/Recommendations

Due to the time of treatment, the overall effectiveness of the 2014 aquatic plant management program will be further assessed during the 2015 management season. Although every observed patch of *P. australis*, seen in **Image 2** right, was treated during the 2014 management season, it is likely that some regrowth will occur in the 2015 season, refer to map (**Figure 1: 2014 September *P. australis* Treatment Area**). Regrowth in the 2015 growing season is expected to amount to a smaller distribution and density than that observed in 2014.

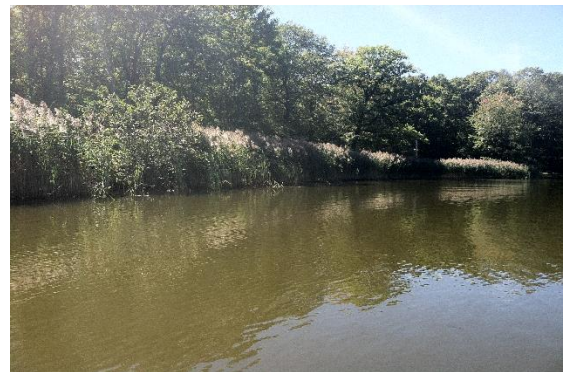


Image 2: *P. australis*

To improve the clarity of the lake, it is recommended that the Hidden Lake Association explore the control of total phosphorus found within the lake in 2015. A limiting nutrient, phosphorus provides vegetation with a key ingredient to stimulate abundant growth and health. Higher than average phosphorus levels can be detrimental to water bodies, choking available space with excessive plant and algae growth. Treatment with aluminum will bond and remove a portion of available phosphorus from the water column, aiding in control of vegetative biomass.

Given the longstanding history of these species within the water body, it is unlikely that one year of treatment will suffice to control the target species – *P. australis*. As such, Lycott recommends continuing the aquatic plant management program – both monitoring and herbicide treatments – in 2015. Lycott recommends, as in 2014, commencing the herbicide treatment late in the growing season when *P. australis* is relocating its gathered energy stores to the rhizomes and is more susceptible to an herbicide treatment.

# 2014 September *P. australis* Treatment Area

## Legend

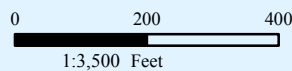
 Treated *P. australis*



**Hidden Lake  
Higganum, CT**



Data Collected: 9/19/14  
Map Prepared: 10/27/14  
For Hidden Lake  
Association (#180-14)  
Basemap © 2013 Esri



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