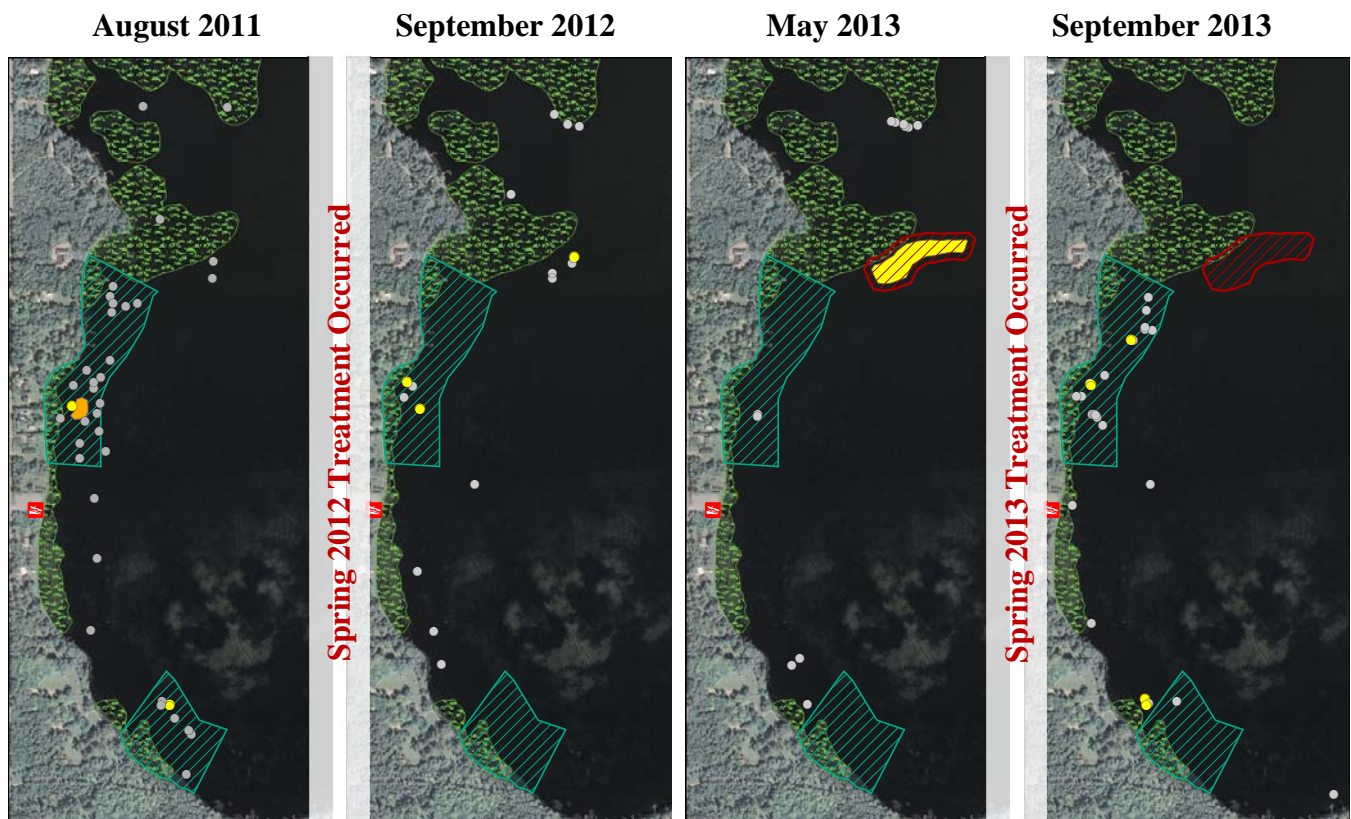


## Introduction

Eurasian water milfoil (EWM) was first discovered by Onterra ecologists during a June 15, 2011 Early Season (ES) Aquatic Invasive Species (AIS) Survey. An additional survey was completed during August 2011, resulting in numerous *Single or Few Plants*, several *Clumps of Plants*, and a *Highly Dominant* EWM colony being mapped near the CTH Q boat landing (Figure 1). With Onterra's assistance, the Pelican Lake Property Owners Association (PLPOA) successfully secured a Wisconsin Department of Natural Resources (WDNR) AIS-Early Detection and Response (EDR) Grant to fund the monitoring and implementation of the control strategy.

In order to target the EWM located during August 2011, 14.6 acres of Pelican Lake were treated with granular 2,4-D at 3.0 ppm ae by Stantec on May 16, 2012. Post-treatment surveys were conducted by Onterra on September 17, 2012 to determine the treatments efficacy. Only a small number of EWM plants were observed during this survey (Figure 1), indicating that the 2012 treatment had been successful. While a spring 2013 treatment was not proposed, the Pelican Lake Property Owners were prepared mentally and sociologically if a spring survey revealed that the 2012 treatment was not as effective as originally thought and rebounded EWM plants required treatment.



**Figure 1. EWM locations from August 2011, September 2012, May 2013, and September 2013 surveys.** Gray Point = Single or Few Plants; Yellow Point = Clumps of Plants; Yellow polygon = Dominant Colony. Green Hashed Area = May 2012 Treatment Area, Red Hashed Area = June 2013 Treatment Area

## Pretreatment Confirmation and Refinement Survey

On May 16, 2013, Onterra conducted the EWM Pretreatment Confirmation and Refinement Survey on Pelican Lake. To keep survey costs to a minimum, the Pretreatment Confirmation and Refinement Survey only focused on the bay where the 2012 herbicide treatment took place. Large colonies over 40 feet in diameter were mapped using polygons (areas), while small colonies, clumps of plants, and single plants were mapped using points. EWM occurrences mapped using point-based methodologies were designated as *Single or Few Plants*, *Clumps of Plants*, or *Small Plant Colonies*. Colonies marked with polygons were designated using a 5- tiered density scale from *Highly Scattered* to *Surface Matting*.

The Pretreatment Confirmation and Refinement Survey located minimal EWM within the 2012 treatment area (Map 1, Figure 1). However, a *Dominant* EWM colony was located to the northeast of the treatment areas, mostly through the aid of a submersed camera. After discussions between the PLPOA, WDNR, and Onterra, a control strategy targeting the densest area of EWM in front of the public access location was permitted. The final treatment strategy included a 40-foot buffer around the colony and targeted the EWM with granular 2,4-D at its maximum application rate (4.0 ppm ae). The treatment was conducted by Stantec, Inc. during the afternoon of May 20, 2013. The applicator reported southern winds at 5-15 mph during the application.

## Late-Season EWM Peak-biomass Survey

EWM continues to grow and spread throughout the summer. For this reason, a late-summer EWM survey was conducted to understand the peak growth (peak-biomass) of the EWM population during 2013. On September 13, 2013 Onterra ecologists meandered a few of the more plant-rich parts of Pelican Lake in search of EWM.

During the meander survey, no colonized EWM plants were located within Pelican Lake (Map 2, Figure 1). Within the 2013 herbicide treatment area, no EWM was observed during this post treatment assessment. This indicates that the 2013 herbicide treatment was highly effective at controlling EWM.

The few more EWM occurrences were located in the northern 2012 treatment area than in past surveys, indicated that some amount of regrowth or re-colonization is occurring in this location. Almost no EWM was located within the southern 2012 treatment area; however a few EWM *Clumps of Plants* were located just to the west of this location. The survey also located a several EWM *Single or Few Plants* within Outlet Bay (Map 2).

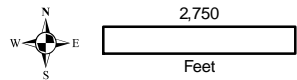
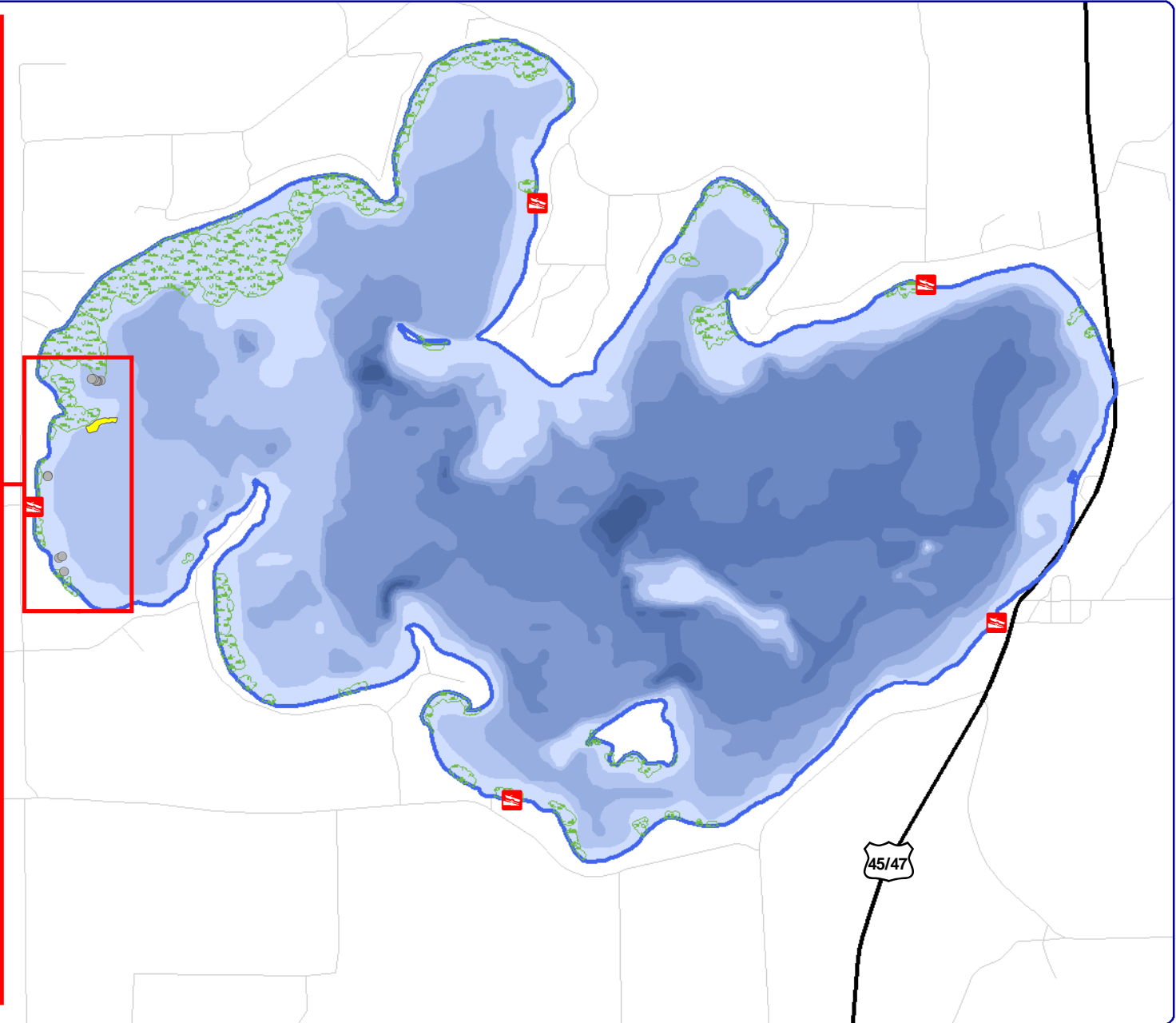
## 2013 Conclusions & Discussion

Overall, the 2013 EWM control program on Pelican Lake was met with encouraging results. The 2013 treatment was effective at controlling EWM with no regrowth observed within this area. But as noted above, an increasing amount of low-density EWM has been located within the northern 2012 treatment area.

With the low level of EWM currently existing in Pelican Lake, the proposed 2014 control strategy does not include an herbicide treatment. Volunteer-based hand-harvesting efforts would be extremely beneficial, especially within the shallow bay that was targeted with herbicides in 2013. If EWM

rebounds within 2013 treatment area, the low-density levels may be suitable for hand-removal by volunteers with advanced snorkeling or scuba abilities.

Due to the plethora of native plants within part of the lake displayed in Figure 1, PLPOA volunteers have had difficult locating EWM to conduct hand-harvesting control strategies on. It is proposed that a slightly modified approach be take in 2014 to help guide the volunteer-based activities. The PLPOA would purchase a Garmin GPSMAP 78, capable of being supplied with basemaps created by Onterra. Onterra would conduct an EWM mapping survey during June 2014 and provide the PLPOA with a basemap containing the survey findings. The GPS would guide the volunteer-based hand-harvesting efforts. A late- season EWM survey would be conducted towards the end of the growing season to evaluate the 2014 volunteer-based hand-harvesting efforts, as well as to propose a control strategy (hand-removal and/or herbicide treatment) for 2015.



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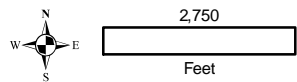
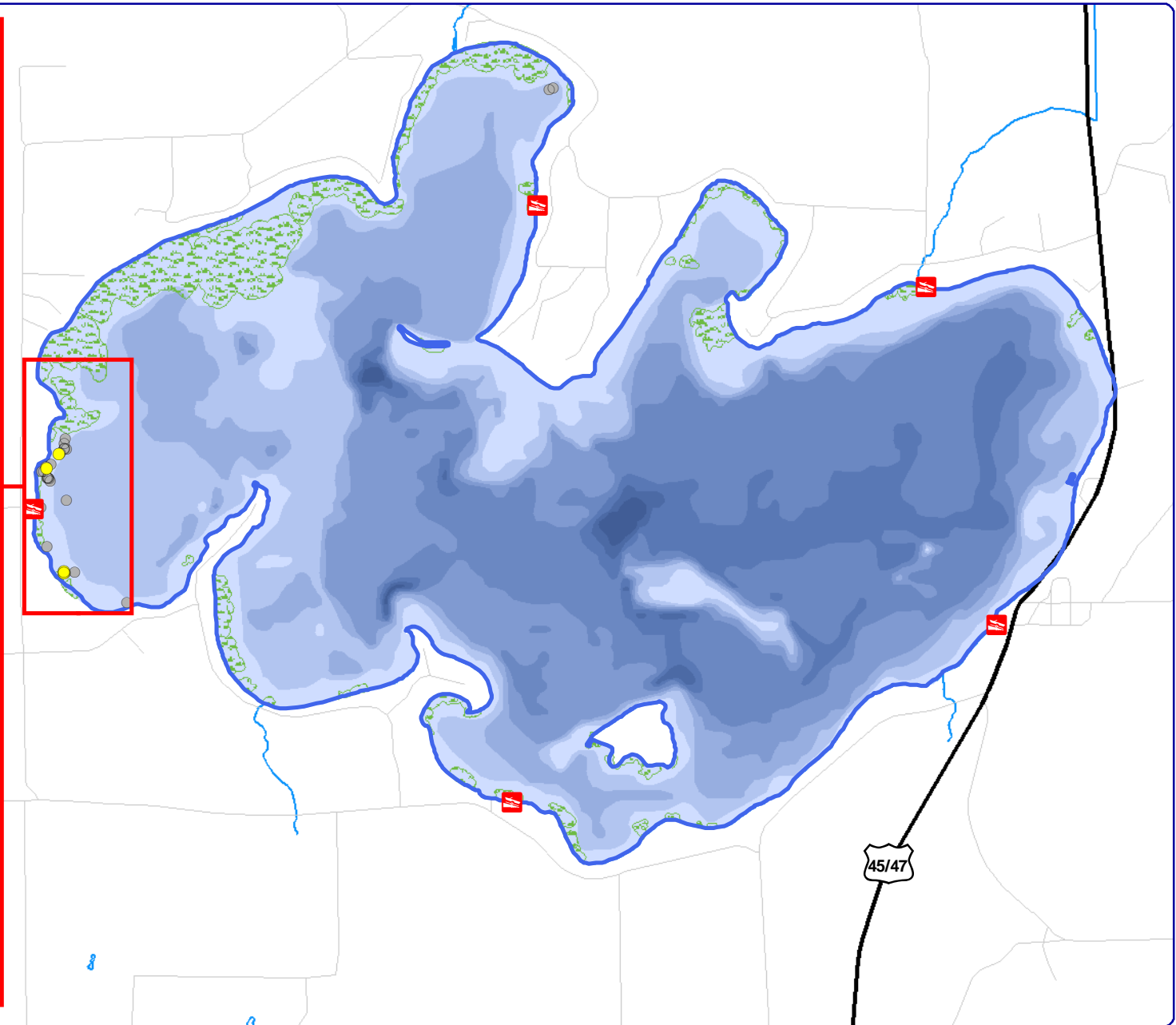
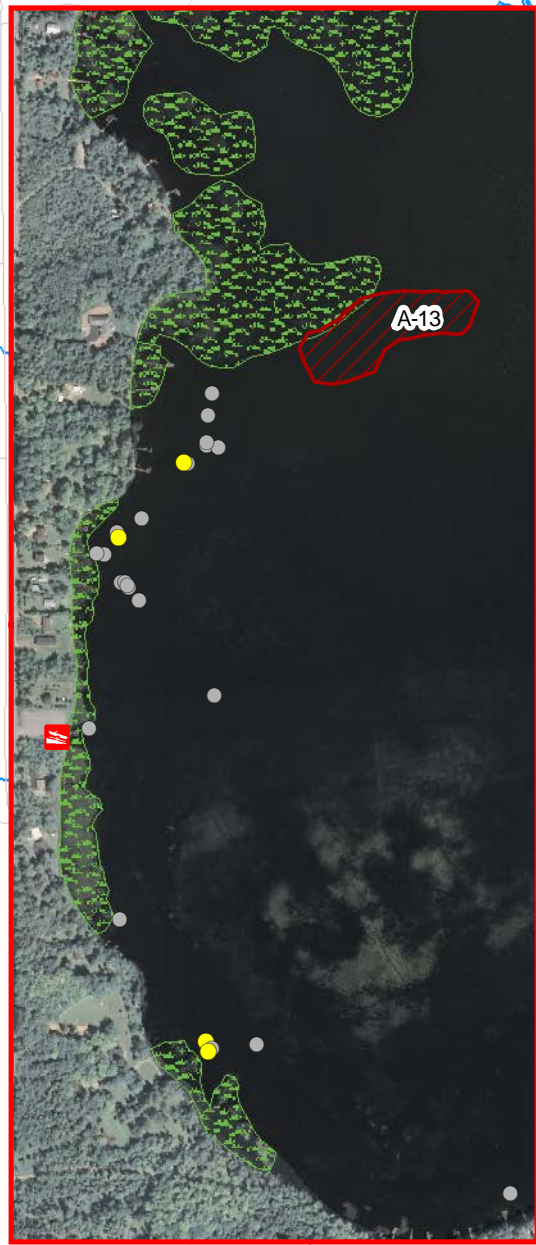
**Sources:**  
 Roads and Hydro: WDNR  
 Orthophotography: NAIP, 2010  
 Aquatic Plants: Onterra, 2012-13  
**Map Date:** September 30, 2013  
 Filename: Map1\_Pelican\_EWM\_Spring2013.mxd



**Legend**

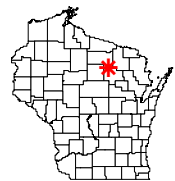
- Highly Scattered (none found)
- Scattered (none found)
- Dominant
- Highly Dominant (none found)
- Surface Matting (none found)
- Single or Few Plants
- Clump of Plants (none found)
- Small Plant Colony (none found)
- Floating-leaf and/or Emergent Plant Colony
- 2013 Final Treatment Area

Map 1  
 Pelican Lake  
 Oneida County, Wisconsin  
**Spring 2013**  
**EWM Survey Results**



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Sources:  
 Roads and Hydro: WDNR  
 Orthophotography: NAIP, 2010  
 Aquatic Plants: Onterra, 2012-13  
 Map Date: September 30, 2013  
 Filename: Map2\_Pelican\_EWMPB\_Sept2013.mxd



Project Location in Wisconsin

**Legend**

- Highly Scattered (none found)
- Scattered (none found)
- Dominant (none found)
- Highly Dominant (none found)
- Surface Matting (none found)
- Single or Few Plants
- Clump of Plants
- Small Plant Colony (none found)
- Floating-leaf and/or Emergent Plant Colony
- 2013 Final Treatment Area

Map 2  
 Pelican Lake  
 Oneida County, Wisconsin  
 September 2013  
 EWM Survey Results