

Tomahawk Lake AIS Control for 2015 (ACEI-166-15) Final Report

The following narrative reports on the successes of the Tomahawk Lake Association in meeting the achievement goals of the Tomahawk Lake AIS control grant for 2015 as outlined in the grant application submitted for grant number ACEI-166-15. The goals that we outlined in our grant request are those of our comprehensive Lake management plan.

1. Control the growth and spread of aquatic invasive species in the Tomahawk Lake watershed.
2. Reduce the total acreage of currently established heavily infested Eurasian water milfoil polygons (totaling 9.4 acres) by 50% over the one-year AIS control grant period.
3. Create a condition where the native plant community is allowed to regenerate in areas previously overwhelmed by Eurasian water milfoil.
4. Maintain to volunteer manned monitoring systems (sentinels plus citizens Lake monitoring network) to identify areas of aquatic invasive species infestation and target control activities and monitor water quality.
5. Professionally survey areas of Eurasian Water Milfoil treated with herbicides or cleared manually using the hydraulic conveyor system (HCS) and major native plant response to treatments.
6. Implement an education and inspection strategy to prevent re-infestation or exportation of aquatic invasive species (C.B.C.W.)
7. promote the restoration of shoreline areas to minimize conditions promoting aquatic invasive species introduction and/or growth.
8. Educate the Tomahawk Lake watershed community as well as transient watershed users about aquatic invasive species and the practices that minimize their dispersion and growth.

The initiatives taken by the Tomahawk Lake Association to address these goals have been addressed in the Aquatic Plant Management Report for 2015 submitted to the Wisconsin Department of Natural Resources at the end of 2015, as well as the Hydraulic Conveyor System Harvesting Report for 2015 also submitted to the Wisconsin Department of Natural Resources at the end of 2015. Additionally detailed descriptions of these efforts have been reported in the grant quarterly reports submitted over the course of the grant year. A recap of those accomplishments are noted below:

Professional surveys:

In accordance with WDNR protocols, three scientific point intercept surveys were taken over the course of the grant to identify and document pre-and post -treatment conditions:

1. Early fall 2014 Pretreatment AIS & Native Plant point intercept survey establishing polygons for chemical treatment of Eurasian Water Milfoil in the spring of 2015.
2. late spring 2015 Pretreatment AIS confirming survey confirming the location, size and shape, and plant density of Eurasian water milfoil heavily infested beds within the established polygons.
3. Late summer 2015 post treatment AIS & Native Plant point intercept survey with which to assess the effects of the chemical treatment on both Eurasian Water Milfoil and the native plant community.

Chemical herbicide treatments:

Per the protocols, and reported in the APMR for 2015, the results of the chemical treatment indicate a success rate of 65.13% of Eurasian water milfoil in the infested polygons. The pretreatment EWM frequency of occurrence was 58.33, and the post-treatment EWM frequency of occurrence was 20.34. In addition, the average EWM rake value change for all treated polygons showed an overall rake value reduction of .5050 of one rating point.

The effects of the treatment upon the native plant community were mixed in terms of their significance.

Within the Dicots present two species had changes of frequency that were deemed as significant:

1. Eurasian water milfoil experienced a “highly significant” reduction.
2. Northern water milfoil experienced a “somewhat significant” reduction.

Among the non-dicots present, seven species showed significant changes in frequency of occurrence of which four were decreases it should be noted there is a likelihood that to the four significant decreases in frequency of occurrence were the result of misidentification of two species in the pretreatment survey. *Najas guadalupensis* was misidentified as *Najas flexilis* in the pretreatment survey and *Potamogeton gramineus* was misidentified as *Potamogeton Illinoisensis* in the pretreatment survey.

Finally, the Simpson Diversity Index computed and reported in the pre-and post-treatment surveys increased from 0.91 to 0.92. This would indicate that the net effect of the 2015 aquatic herbicide treatment had little significant effect upon the native plant community.

Sentinels AIS Surveys:

The Tomahawk Lake Association AIS monitoring program completed two AIS surveys during the course of the 2015 summer season. 16 2 to 3 man teams took to the water to search and

record the location of aquatic invasive species infestation sites within the watershed. GPS data points were collected for each location where AIS was found within the assigned sectors, and the GPS data points were mapped. In the late summer the completed sentinels map including all of the data points was given to the AIS coordinator to assist him in locating AIS beds in the pre & post-treatment AIS point intercept surveys. In addition "Sentinels" survey maps are given to the Hydraulic Conveyor System divers to help them in locating new and existing EWM beds to be considered for harvesting. A copy of the 2015 Sentinels map is included within this report.

Citizens Lake Monitoring Network (CLMN):

the Tomahawk Lake Association collects CLMN data and water samples on a biweekly schedule from shortly after ice out to shortly before ice up. These water samples are sent to UW Stevens Point for analysis, and the data collected during the surveys are submitted into the "Swims" program.

Mechanical Harvesting:

The Tomahawk Lake Association's Hydraulic Conveyor System (dash program) operated for its eighth consecutive year in 2015. A detailed explanation of the program results for 2015 can be found in the 2015 Hydraulic Conveyor System Final Harvesting Report submitted to the Wisconsin Department of Natural Resources in November 2015. A recap of the harvesting results as noted below:

- | | |
|---|-------------------------|
| 1. Number of EWM infested sites harvested | 114 |
| 2. Seasonal drained weight of EWM removed | 24,765 pounds |
| 3. Estimated area searched (in square feet) | 65,225 ft. ² |
| 4. EWM harvest selectivity (bi-catch) | 93.19% |

The Tomahawk Lake Association believes that the 2015 HCS harvesting season was successful in the control and reduction of new EWM outbreaks within the watershed. The Hydraulic Conveyor System is one element in a two-tiered treatment regime in our effort to control and reduce the effects of aquatic invasive species in our watershed. The goal of the HCS is to reduce both the number and size of new EWM sites within the lake system.

Clean Boats Clean Waters:

the Tomahawk Lake Association operated a clean boats clean waters program at the public landings in the Tomahawk Lake watershed. The organization maintained a paid attendant program at two landings which serve the watershed, on Friday afternoons and full days on Saturday and Sunday plus summer holidays. The program ran from Memorial Day weekend through mid-September. The clean boats clean waters landing reports and data sheets were submitted through the swims program as per the protocols. The Tomahawk Lake Association also maintained a Clean Boats Clean Waters landing hut at the town of Lake Tomahawk ramps. For 2015, the clean boats clean waters program reported the following data points:

- | | |
|---------------------------|------|
| 1. Total boats inspected | 2744 |
| 2. Total people contacted | 7664 |

3. Total inspection hours spent

637

This completes the final report for the Tomahawk Lake AIS control for 2015. Please direct any questions or comments regarding this report to:

Ned Greedy

The Tomahawk Lake Association, Inc.

edgreedy@gmail.com

715 358-7896

2015 "Sentinels" Surveys

1st survey June 20 - July 4th
2nd Survey July 25th - Aug 8th



Legend

SentinelData2015

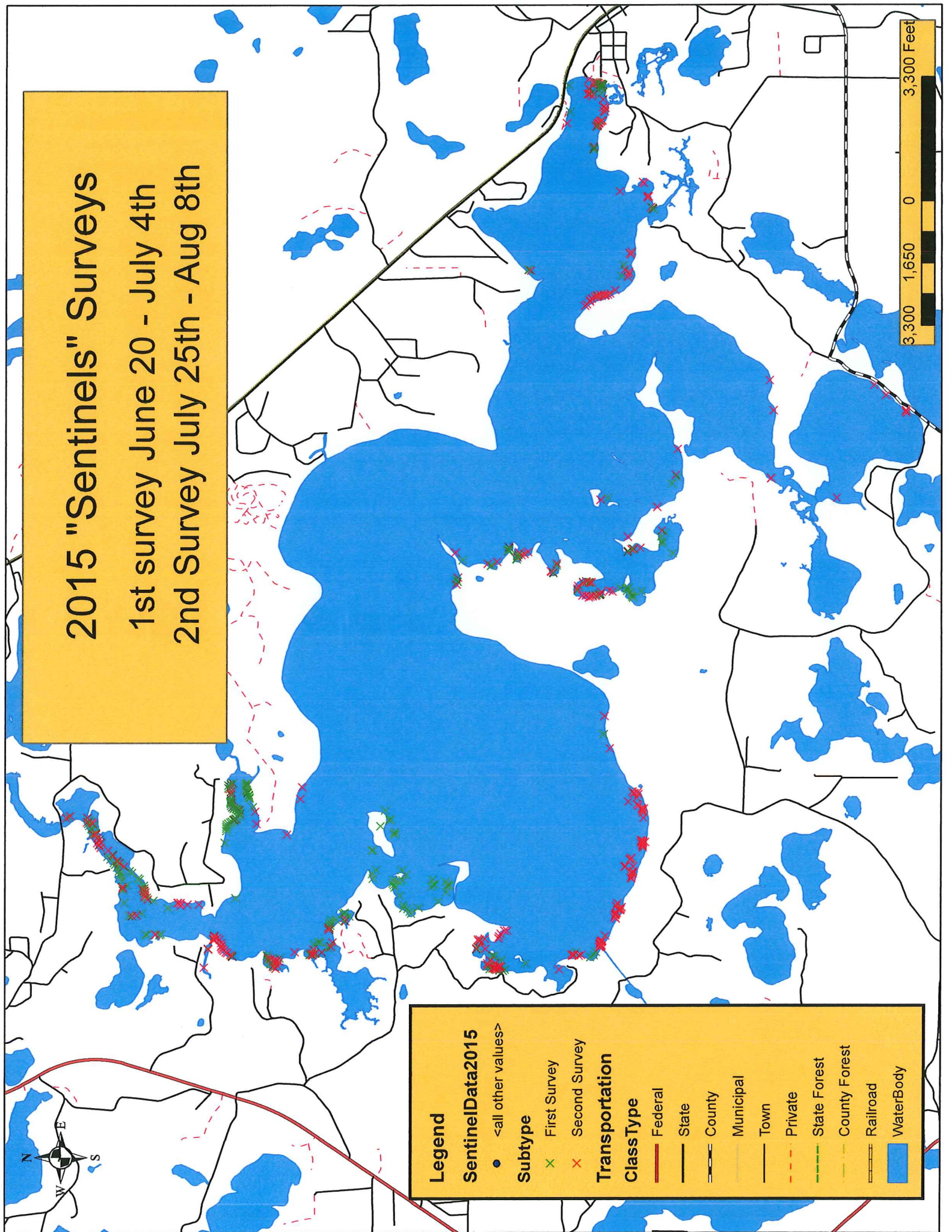
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Subtype

- ✕ First Survey
- ✕ Second Survey

Transportation

- Federal
- State
- County
- Municipal
- Town
- Private
- State Forest
- County Forest
- Railroad
- WaterBody



10/18/16

Jane C. Malischke
Environmental Grants Specialist
810 Maple Street
Spooner, WI 54801

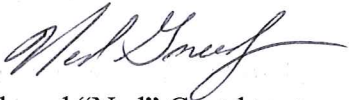
RE: Tomahawk Lake Association, Inc.
AIS Grant # ACEI-166-15

Dear Jane,

Enclosed in this packet please find the Final Report for the "Tomahawk Lake AIS Control for 2015."

This should complete the documentation for this grant as the 4 quarterly reports have been previously submitted

As always Jane, thank you for your help with processing our grant requests. If you have any questions concerning this report, please contact me at your first convenience.



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