WISCONSIN DEPARTMENT OF NATURAL RESOURCES
AQUATIC INVASIVE SPECIES GRANT PROGRAM

Application Materials

North & South Twin Lakes AIS Control & Prevention Project: EWM Hand-Harvesting 2014-2015

Prepared for the

North & South Twin Lakes Riparian Association

February 1, 2014

Onterra LLC
Lake Management Planning

815 Prosper Rd. , De Pere, WI 54115 Voice: 920.338.8860 Fax: 920.338.8865 www.onterra-eco.com

INTRODUCTION

North and South Twin Lakes, 2,788 and 642 acres, respectively are mesotrophic drainage lakes located in Vilas County, Wisconsin (Map 1). Water flows from North Twin Lake south into South Twin Lake, and eventually over a dam located at the South Twin Lake outlet.

North and South Twin Lakes are highly sought after location amongst recreationists and anglers. North and South Twin Lakes contain three boat landings with approximately 90 vehicle-trailer parking spaces between them. Association members, using parking areas utilized during fishing tournaments, measured at least 20 vehicle-trailer spaces at the South Twin landing and at least 35 each at the Lakota Road and Town of Phelps landings on North Twin Lake. Further, the Town of Phelps maintains two waterfront parks on North Twin Lake, one with a public swimming beach and the other with a fishing pier. The Phelps boat landing also has an American's with Disabilities Act (ADA) accessible fishing pier. As defined by NR 1.91(4d), the lakes exceed minimum access requirements. Functioning resorts are present on both lakes and a girl's camp exists on South Twin Lake.

The lake is also frequented by numerous transient boaters during the numerous fishing tournaments that are held on the system, including several large tournaments that span over a number of lakes in the area (National Championship Musky Open Tournament, Annual Musky Marathon, and the Annual Chamber Musky Classic).

PROBLEM IDENTIFICATION

Property owners on the lakes organized the North and South Twin Lakes Riparian Association (NSTLRA) in 1995. In 1996, the NSTLRA partnered with Vilas County, the University of Wisconsin-Extension, and the Wisconsin Department of Natural Resources (WDNR) to begin the creation of a *Comprehensive Lake Management Plan* for the lakes. Phase I of the comprehensive plan was completed in 2000 and included components addressing fisheries, watershed composition, water quality, geology, aquatic vegetation communities, and wildlife use of the lakes, along with the results of a detailed property owner survey. Although Phase I of the management plan contains a great deal of information, additional work was required to continue the planning effort. In 2004 the Town of Phelps and the NSTLRA partnered to sponsor Phase II of the North and South Twin Lakes Comprehensive Management Planning Project (Phase II Plan). The Phase II Plan was completed during the summer of 2006 (NSTLRA et al. 2006) and contained an expanded analysis of current and past water quality data, modeling of watershed phosphorus inputs from surface flows and septic systems, and a comprehensive analysis of each lake's aquatic plant community.

EWM was not located during surveys completed by Vilas County during summers of 1996 and 1997; however, it was located by NSTLRA members during 2001. It was also located by staff members of the Wisconsin Department of Natural Resource (WDNR) and Vilas County during surveys used to create North & South Twin Lakes Sensitive Area Survey Report and Management Guidelines (2002). Based upon guidance in the sensitive area survey and directly from WDNR specialists, multiple 2,4-D treatments were completed between 2001 and 2003, with the largest area, approximately 50 acres, being treated in August 2003. The treatments in 2001 and 2002 were basically spot treatments, with the 2001 treatments totaling 7 acres and the 2002 treatments totaling 6.35 acres. Anecdotal reports indicate that the

smaller treatments met with only limited success, while the final, larger treatment was more successful. Unfortunately, no structured monitoring was completed in conjunction with these treatments and little is truly known about their success or failure.

In 2008, the NSTLRA successfully applied for WDNR grant funds to initiate control measures outlined within their management plan. The funds were to cover the four year program aimed at significantly reducing EWM within the lake. During the first year, approximately 65 acres were treated in North and South Twin Lakes using granular 2,4-D. These spot treatments were determined to be largely ineffective in South Twin Lake and a new strategy was devised using whole-lake strategy.

In 2009 and 2010, whole lake treatments utilizing liquid 2,4-D occurred on South Twin Lake. These treatments were extremely effective at controlling EWM, but some native plants were also impacted (Figure 1). Post treatment point-intercept surveys conducted by Onterra and WDNR Science Services show that some species recovered quickly, whereas others are slower to recover. These data indicate that the EWM frequency of occurrence has increased from 0% in 2010 to 0.3% in 2011 and 3.2% in 2013. Qualitative EWM mapping data collected by Onterra has shown how the EWM population has increased within South Twin Lake over this time period (Map 2).

An aggressive trial set of treatments was conducted on North Twin Lake during the spring of 2013, producing greater results than in previous years (Map 3). Professional hand-harvesting efforts on South Twin Lake were also utilized for the first time in 2013. While clear successes may not have occurred, the NSTLRA is interested in moving forward with a 2-year control project where aggressive professional hand-harvesting occurs in South Twin and the adjacent areas of North Twin Lake known to contain EWM. If this methodology proves to be ineffective over the course of this project, the NSTLRA would give consideration to conducting a whole-lake 2,4-D treatment on South Twin in subsequent years following the completion of the proposed project.

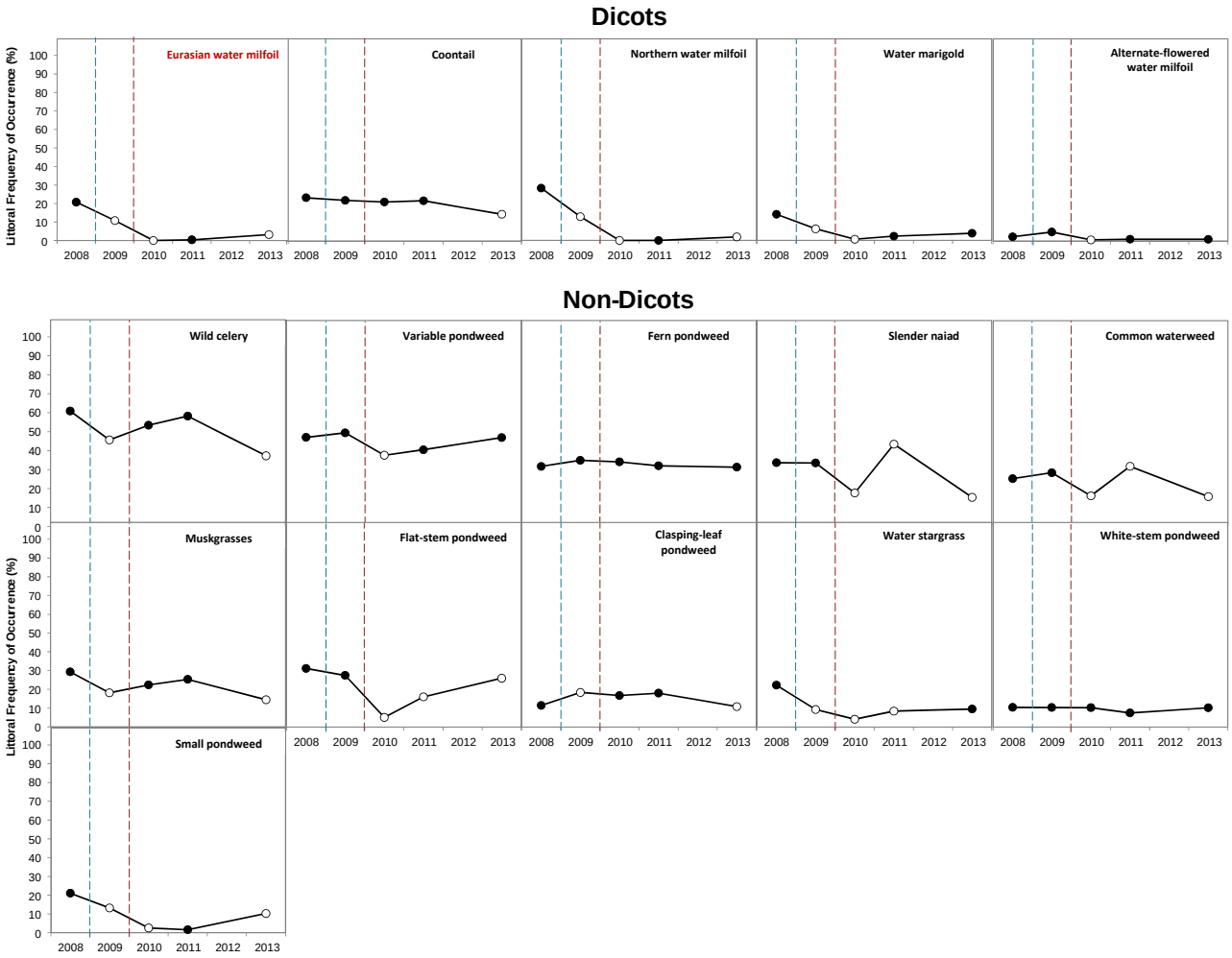


Figure 1. Aquatic plant littoral frequency of occurrence 2008-2013. Created using data from Onterra (2009, 2010, 2011) and WDNR (2008, 2013) point-intercept surveys. Open circle represents statistically valid change from previous survey. Blue dashed line indicates 2009 whole-lake 2,4-D treatment (ave. 0-7 DAT=0.122 ppm ae), red dashed line indicates 2010 whole-lake 2,4-D treatment(ave. 0-7 DAT=0.575 ppm ae),

PROJECT GOALS

The chief goal of this management project is bring EWM occurrences within North and South Twin to levels that minimally affect the aquatic ecosystem of the system. Because the primary goal is to better the lakes' ecological state, control actions must implemented to maximize impact on the target species while minimizing impacts on non-target, native species. To accomplish this, both target and non-target species must be monitored closely.

Although all of the impacts are undesirable, the potential impacts to each lake's native aquatic plant community is of special concern because of the high floristic quality (South Twin 2011 FQI=32.5; North Twin 2011 FQI=34.1) and large number of native species (South Twin 2011 N=29 including incidentals; North Twin 2011 N=37 including incidentals).

The objective of this management action is not to eradicate EWM from North and South Twin Lakes, as that would be impossible. The objective is to bring EWM down to more easily

controlled levels. To meet this objective efficiently, a cyclic series of steps is used to plan and implement the treatment strategies. The series includes:

1. A lakewide assessment of EWM completed while the plant is at peak biomass (late summer).
2. Creation of the hand-removal strategy/areas for the following summer building upon success and failures documented from previous year (winter).
3. Implementation of professional hand-harvesting activities (summer)
4. Assessment of treatment results (late summer following hand-harvesting activities).

Once Step 4 is completed, the process would begin again that same summer with the completion of a peak biomass survey. The survey results would then be used to create the next spring's professional hand-harvesting strategy and prioritization.

PROJECT SCOPE AND TIMELINE

Table 1 provides an approximate timeline for completion of the tasks. The schedule needs to be flexible to accommodate for weather, scheduling conflicts, etc., but it provides a general indication of the dates for completing the proposed components.

Table 1. Approximate Project Schedule

Task	2014				2015				
	W	Sp	Su	F	W	Sp	Su	F	W
AIS-EPC Grant Application								?	
Professional Hand-Harvesting									
EWM Peak-biomass Survey									
South Twin Point-intercept Survey									
Annual Report									

Professional EWM Monitoring Activities

As the name implies, the EWM peak-biomass survey is completed when the plant is at its peak growth, allowing for a true assessment of the amount of this exotic within the lake. For North and South Twin Lakes, this survey will likely take place between mid-August and mid-September. This survey would include a complete meander survey of South Twin Lake's littoral zone and a focused meander of North Twin's littoral zone (locations that have contained EWM in the past as well as additional areas located by NSTLRA surveillance monitoring activities). All incidences of EWM would be mapped with a sub-meter GPS data collector using either points or polygons, depending on the size of the finding. Large colonies over 40 feet in diameter would be mapped using polygons (areas), while small colonies, clumps of plants, and single plants would be mapped using points. Colonies marked with polygons would also be designated using a 5-tiered density scale from *Highly Scattered* to *Surface Matting*

Volunteer EWM Surveillance Monitoring

In lakes without AIS, early detection of pioneer colonies commonly leads to successful control and in cases of very small infestations, possibly even eradication. Even in lakes where

these plants occur, monitoring for new colonies is essential to successful control. NSTLRA members have been trained on AIS identification and surveillance monitoring strategies and have been carrying out these activities since 2002. However, the proposed project contains a more-developed framework to enhance this program, which was initiated in 2013.

As discussed above, professional EWM surveys would be conducted annually during the late-summer. The NSTLRA has purchased several hand-held GPS unit that are capable of supporting basemaps. Prior to the start of summer, the NSTLRA's GPS would be loaded with basemaps of the previous summer's EWM locations.

Suring 2014 and 2015, the volunteers will focus on parts of the system that did not contain EWM in the previous surveys, particularly within North Twin Lake. Over the course of the summer (July-August), the NSTLRA volunteers would survey the system, with attention to North Twin Lake. The volunteers would then provide locations of EWM and other aquatic invasive species to Onterra via electronic format. These locations would be focused on during Onterra's late-summer EWM peak-biomass survey making more efficient use of professional time while engaging stakeholders in the program.

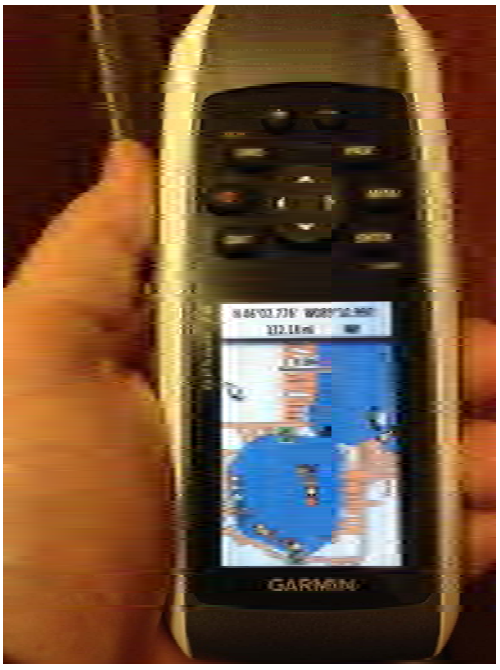


Photo 1. GPS unit with basemap. Showing North & South Twin Lake 2012 EWM survey results and 2013 treatment areas.

Volunteers conducting surveillance monitoring would input all records into the online SWIMS database in accordance with CLMN protocols. This would include surveys where aquatic invasive species were not identified.

Professional Hand-Harvesting

The NSTLRA has attempted to conduct volunteer-based hand harvesting in prior years, only to be met with insufficient volunteerism for a successful control effort to occur. During the summer of 2013, the NSTLRA hired a private firm to carry out a large portion of the hand-removal strategy. The proposed project continues these efforts in 2014 and 2015, but at a higher amount of effort than occurred in 2013. For budgeting purposes, the proposed project includes $12,000 worth of hand-harvesting. Depending on the firm hired, the equipment used, and the number of divers in the water at a time; that may equate to 60-120 crew hours of hand-harvesting effort.

Point-intercept Survey on South Twin Lake

In 2010, a successful whole-lake herbicide treatment was conducted on South Twin Lake. While the EWM population continues to grow within the lake, it is not at levels that would warrant a repeat whole-lake treatment at this time. It is anticipated that the professional hand-harvesting program would be able to keep the EWM population within the lake below this

threshold. Conducting a whole-lake point-intercept survey on South Twin Lake in 2015 would allow a full assessment of the native and non-native plants within the lake. If the professional hand-harvesting program is not able to overcome the increase of the EWM population, the point-intercept survey would be an important step in preparing for a repeat whole-lake treatment in the spring of 2016.

STAKEHOLDER PARTICIPATION

Partnerships

The NSTLRA has successfully partnered with the Town of Phelps to control AIS in the township. North and South Twin Lakes receives annual contributions from the Phelps Town Lakes Committee in the amount of $2,000. This donation would exceed 10% of the local share cash costs of the project.

Clean Boats Clean Waters Program

The intent of the boat inspections would not only be to prevent additional invasives from entering the lake through its public access points, but also to prevent the infestation of other waterways with invasives that originated in North and South Twin Lakes. The goal would be to cover the landing during the busiest times in order to maximize contact with lake users, spreading the word about the negative impacts of AIS on our lakes and educating people about how they are the primary vector of its spread.

Due to the large number of activities that NSTLRA volunteers are called upon during the proposed project (AIS monitoring, stakeholder education, ect.), 200 annual hours of paid watercraft inspectors will be used. Vilas County has agreed to lend assistance to the project as opportunities develop, but particularly with regard to coordinating the student intern program that will provide 200 hours of paid watercraft inspection services. Cost coverage for the paid watercraft inspectors are excluded from the proposed project, as they are included within a separate WDNR grant obtained by the NSTLRA.

Boat Decontamination (2014-2015)

It is understood that the primary vector for EWM spread is from plant fragments attached to boats and other equipment being passed from lake to lake. The Long Lake of Phelps Lake District (LLPLD) has partnered with a car washing facility currently being built in Phelps to provide manual wash tokens to boats inspected within the CBCW watercraft inspections. The tokens would be specially marked such that it would be possible be able to track the number of boats washed compared to the amount of tokens given out. Informal polling conducted by watercraft inspectors at Long Lake in 2013 indicated that as many as half of boaters indicated they would be likely to use the boat wash token (D. Anderson, personal comm.).

The NSTLRA, as well as other Town of Phelps lake groups, are also planning on participating in this effort. The NSTLRA would like to include a budget for 250 boat wash tokens to be distributed in 2014 and 2015.

There is a possibility that the car wash facility might not be fully operational until the end of the summer of 2014. If this is the case, the NSTLRA would like to allocate the above funds

towards hiring a mobile boat washing station to be present on high use time periods (e.g. weekend, holiday, fishing tournament). The LLPLD and NSTLRA have identified two entities that could fulfill these duties, one private company and one non-profit. It is anticipated that a successful implementation of this trail operation may result in the Town of Phelps Lakes Committee or other area organization investigate the option of obtaining their own mobile boat-washing equipment.

PROJECT DELIVERABLES

Annual Report

During the winter months of 2014 and 2015, a letter report would be provided that would include an assessment of the professional hand-harvesting program and guidance for the following year's control program. A map depicting the EWM peak-biomass survey results and recommended hand-harvesting areas would be included within the report. The 2015 report would also include a discussion of the 2015 point-intercept survey of South Twin Lake as well as whether an herbicide treatment is warranted in 2016 or beyond. All reports would be presented in electronic format via email.

Stakeholder Participation

The NSTLRA would be responsible for providing the necessary deliverables for those components listed within the Stakeholder Participation Section. The deliverables for these activities include entering the appropriate information within the WDNR's Surface Water Integrated Monitoring System (SWIMS).

PROJECT COST BREAKDOWN

	Cash Costs	Donated Value
Monitoring and Stakeholder Participation		
Project Administration & Communication	$760.00	
2014 EWM Monitoring (Year 1)		
Hand-removal Coordination & GPS Basemap Creation	$285.00	
2014 EWM Peak-biomass Survey - August/September	$2,410.00	
2014 EWM Monitoring Report - Winter	$720.00	
2015 EWM Monitoring (Year 2)		
Hand-removal Coordination & GPS Basemap Creation	$285.00	
2015 EWM Peak-biomass Survey - August/September	$2,215.00	
2015 EWM Monitoring Report - Winter	$720.00	
South Twin Lake Point-intercept Survey & Data Analysis (2015)	$2,190.00	
Travel - Mileage (0.58/mile, reduced by 40%)	$765.00	
Monitoring and Stakeholder Participation Subtotal	*$10,350.00*	*$0.00*
Professional Hand-Harvesting Services		
2014 Professional Hand-Harvesing	$12,000.00	
2015 Professional Hand-Harvesing	$12,000.00	
Professional Hand-Harvesting Subtotal	*$24,000.00*	*$0.00*
Volunteer Efforts		
Clean Boats Clean Waters		
Paid Monitors	*Within Separate Grant*	
Volunteer Monitors (25 hrs x 2 yr)		$600.00
Boat Wash Tokens ($750/yr x 2 yr)	$1,500.00	
AIS Surveillance Monitoring & Hand Removal		
Volunteers (20 hrs x 2 yr)		$480.00
Volunteer Watercraft Use (2 days @ $70/day x 2 yr)		$280.00
Grant Administration		
Volunteers (20 hrs x 2 yr)		$480.00
Volunteer Efforts Subtotal	*$1,500.00*	*$1,840.00*
Project Subtotals	***$35,850.00***	***$1,840.00***
Total Project	**$37,690.00**	
State Share Requested (50%)	**$18,845.00**	

State of Wisconsin
Department of Natural Resources

Aquatic Invasive Species (AIS) Control Grant Application

Form 8700-307 (12/11)

Notice: Use of this form is required by the DNR for any application filed pursuant to ch. NR 198, Wis. Adm. Code. Personal information collected on this form, including such data as your name, address, phone number, etc., will be used for management and enforcement of DNR programs, and is not intended to be used for any other purpose. Information will be made accessible to requesters under Wisconsin's Open Records laws (s. 19.32-19.39, Wis. Stats.) and requirements.

Section I: Application Type

Check one:

☐ Education, Prevention & Planning ☐ Early Detection & Response ☒ Established Population Control

Legislative District Numbers	
Senate	Assembly
12	34

To determine your legislative district, go to
http://165.189.139.210/WAML//
Type in complete address, next screen shows information

Section II: Applicant Information

Applicant
North & South Twin Lakes Riparian Association

Waterbody Name
North and South Twin Lakes

Project County/Township/Section/Range
Vilas/T41N/S18 & 19/R11E

Type of Eligible Lake or River Applicants

☐ County ☐ Tribe ☐ Other Gov't Unit ☐ Federal
☐ City ☐ Sanitary Dist. ☐ Nonprofit Org. ☐ State
☐ Village ☐ Dist. ☐ College, School, etc. ☐ Other _____
☐ Town ☒ Assoc.

Authorized Representative Named by Resolution	Project Contact Name
Charles A Pedersen	Tim Hoyman
Authorized Representative Title	**Project Contact Title**
Board Member & Chair of Lake Management Committee	Aquatic Ecologist; Onterra, LLC
Address	**Address**
3911 Pedersen Trail	815 Prosper Road
City / State / ZIP Code	**City / State / ZIP Code**
Phelps / WI / 54554	De Pere / WI / 54115
Daytime Phone (area code)	**Evening Phone (area code)**
(847) 946-2979	(847) 946-2979
Daytime Phone (area code)	**Evening Phone (area code)**
920.338.8860	
E-Mail Address	**E-Mail Address**
pedersencap@yahoo.com	thoyman@onterra-eco.com

Mail Check to: (if different from applicant)

Name and Title	Address		
Organization	City	State	ZIP Code

For DNR Use Only

Application Type	Date Received	Date Reviewed (AIS/LC/RC)	AIS/Lake/River Coordinator Approval/Date
Waterbody ID #	Adequate Public Access ☐ Yes ☐ No	Environmental Grants Specialist Approval / Date	
Eligible Project ☐ Yes ☐ No	Eligible Applicant ☐ Yes ☐ No	Project Priority Rank	Research / Demo Project ☐ Yes ☐ No
Prior Grant Award(s) ☐ Yes ☐ No	Fiscal Year(s)	Amount Received to Date $	Project Awarded ☐ Yes ☐ No

Aquatic Invasive Species (AIS) Control Grant Application

Section III: Project Information

Project Title	Proposed Ending Date
North & South Twin AIS Control & Prevention Project: Hand Harvesting 2014-2015	June 30, 2016

Other Management Units	Letter of Support	Other Management Units	Letter of Support
1. Town of Phelps	☐	4. Town of Conover	☐
2. Vilas County Land and Water Conservation Dept.	☐	5.	☐
3. Phelps Town Lakes Committee	☐	6.	☐

Section IV: Public Access

Number of Public Vehicle Trailer Parking Spaces Available at Public Access Sites:	45+ reported on WDNR website, likely closer to 90
Number of Public Access Sites Including Boat Launches and Walk-ins:	3 main landings with one walk-in at dam & 2 beaches

Section V: Cost Estimate and Grant Request

Section V must be completed or application will be returned. Details in support of Section V are welcome.	**Project Costs** Column 1 Cash Costs	Column 2 Donated Value	*DNR Use Only*
1. Salaries, wages and employee benefits			
2. Consulting services (includes shipping/voucher materials)	$10,350.00		
3. Purchased services: Professional Hand-Harvesting	$24,000.00		
4. Other purchased services (specify) :			
5. Plant material			
6. Supplies (specify): Boat washing tokens and/or mobile boat washing station	$1,500.00		
7. Depreciation on equipment			
8. Hourly equipment use charges			
9. State Lab of Hygiene (SLOH) Costs			
10. Non-SLOH Lab Costs			
11. Other (specify): Volunteer In-kind Labor		$1,840.00	
12. **Subtotals** (Sum each column)	*$35,850.00*	*$1,840.00*	
13. **Total Project Cost Estimate** (sum of **column 1** plus sum of **column 2)**	**$37,690.00**		
14. **State Share Requested (up to 75% of total costs may be requested)**	**$18,845.00**		

Subject to the following maximum grant amounts:

- Education, Prevention and Planning Projects—up to $150,000
- Early Detection and Response Projects—up to $20,000
- Established Infestation Control Projects—up to $200,000

Use of Federal funding as match: (check box below if applicable)

☐ We are using or planning to apply for Federal funds to be used as match.
If known, indicate source of funding:

Aquatic Invasive Species (AIS) Control Grant Application

Section VI: Attachments (check all that are included)

A. For all applicants: *(Refer to instructions for applicability.)*

- ☒ 1. Authorizing resolution
- ☒ 2. Letters of support
- ☒ 3. Map of project location and boundaries
- ☒ 4. Lake map with public access sites identified (per Section VI of this application and page 20 of the guidelines)
- ☒ 5. Itemized breakdown of expenses
- ☐ 6. For projects that entail sending samples to the State Laboratory of Hygiene (SLOH) only: a completed SLOH Projected Cost Form
- ☒ 7. Project scope/description:
  - ☒ a. Description of project area
  - ☒ b. Description of problem to be addressed by project
  - ☒ c. Discussion of project goal and objectives
  - ☒ d. Description of methods and activities
  - ☒ e. Description of project products or deliverables
  - ☒ f. Description of data to be collected, if applicable
  - ☒ g. Description of existing and proposed partnerships
  - ☒ h. Discussion of role of project in planning and/or management of lake
  - ☒ i. Timetable for implementation of key activities
  - ☒ j. Plan for sharing project results
  - ☒ k. Other information in support of project no described above

B. For applicants that are Lake Management Organizations (LMOs), River Management Organizations (RMOs) or Qualified Non-profit Organizations:

- ☐ 1. For first time applicant LMOs/RMOs only: A completed Form 8700-226 (Lake Association Organizational Application) or 8700-287 (River Management Organization Application)
- ☐ 2. For first time applicant Qualified Nonprofit Organizations only: Copy of IRS 501(c)(3) determination letter and copies of your Articles of Incorporation and Bylaws
- ☐ 3. List of national and/or statewide organizations with which you are affiliated
- ☐ 4. List of board members' names, including municipality and county of residence. Designate officers
- ☐ 5. Documentation of current financial status
- ☐ 6. Brochures, newsletters, annual reports or other information about your organization

C. Education, Prevention and Planning Projects: *(No additional attachments required.)*

D. Early Detection and Response Projects:

- ☐ 1. APM Permit

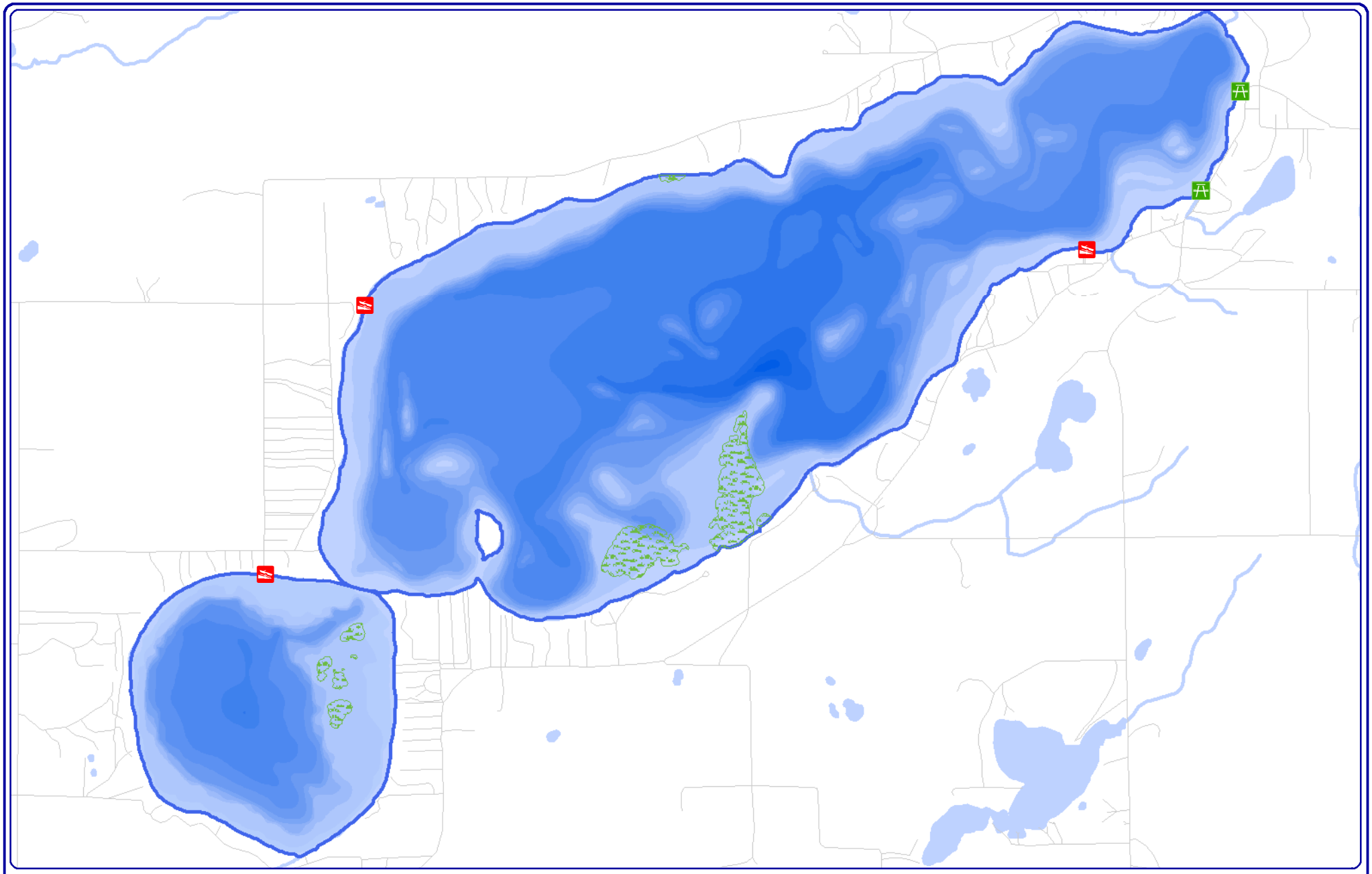
E. Established Infestation Control Projects:

- ☒ 1. Management Plan
- ☐ 2. APM Permit

Section VII: Certification

I certify that information on this application and all its attachments are true and correct and in conformity with applicable Wis. Statutes

Print/Type Name of Authorized Representative	Title of Authorized Representative
Charles A Pedersen	Board Member & Chair of Lake Management Committee
Signature of Authorized Representative	Date Signed



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Onterra LLC
Lake Management Planning
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www.onterra-eco.com

Sources:
Roads and Hydro: WDNR
Bathymetry: WDNR, digitized by Onterra
Aquatic Plants: Onterra, 2011
Map Date: January 17, 2014
Filename: Map1_NSTwn_location.mxd

Project Location in Wisconsin

Legend

North Twin Lake ~ 2,879 acres
South Twin Lake ~ 631 acres
WDNR Definition

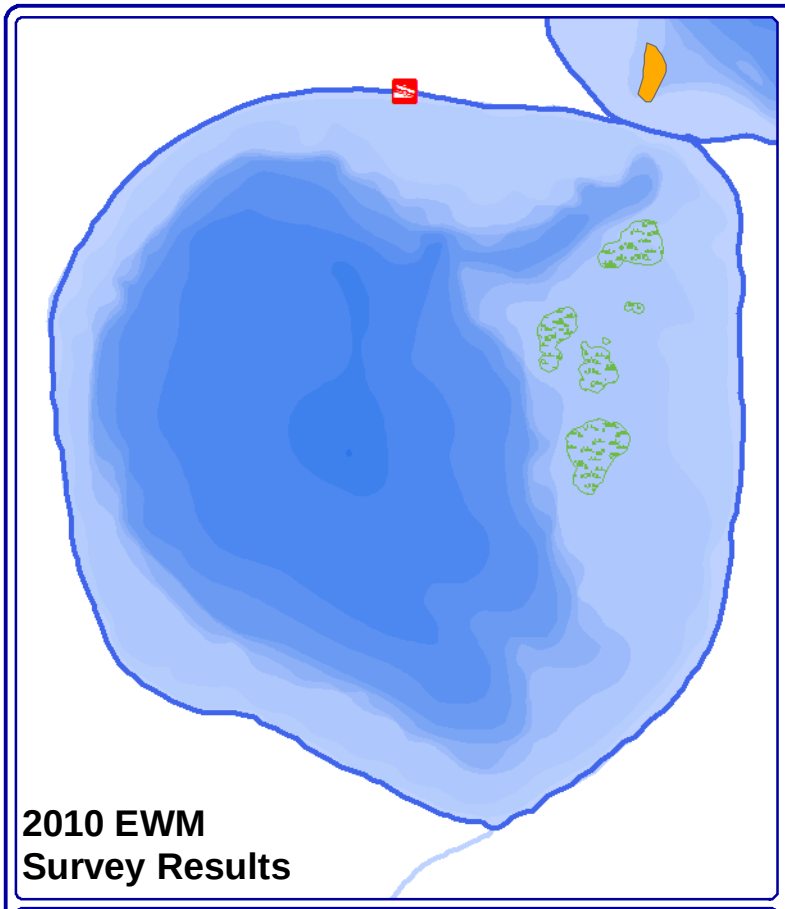
Hardstem Bulrush Community
(Summer 2011)

Public Boat Landing

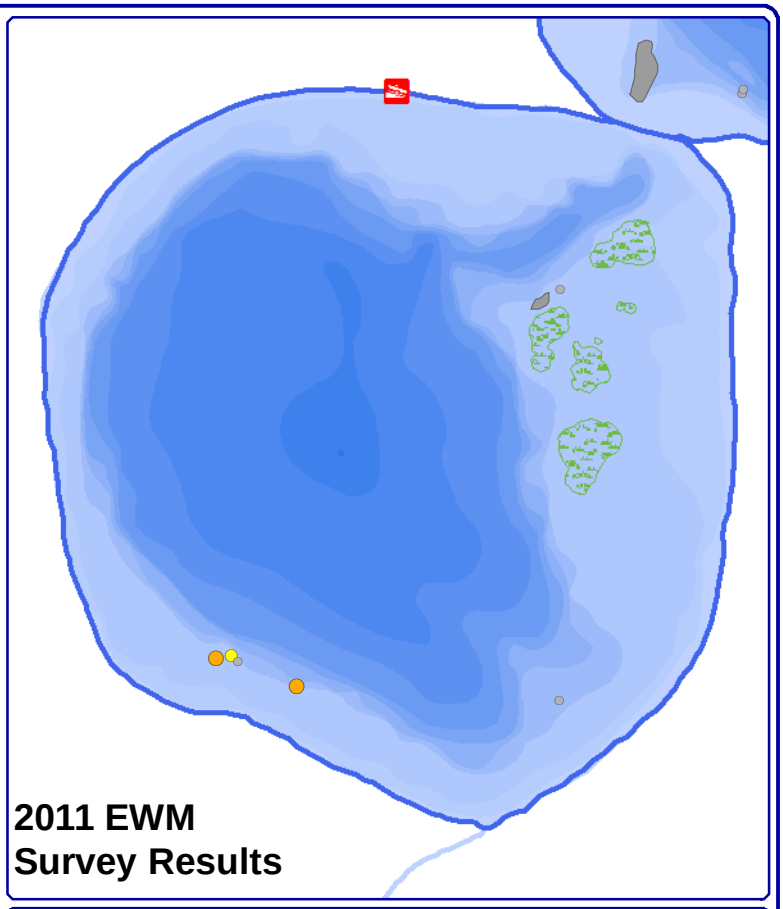
Public Park

Map 1
North & South Twin Lakes
Vilas County, Wisconsin

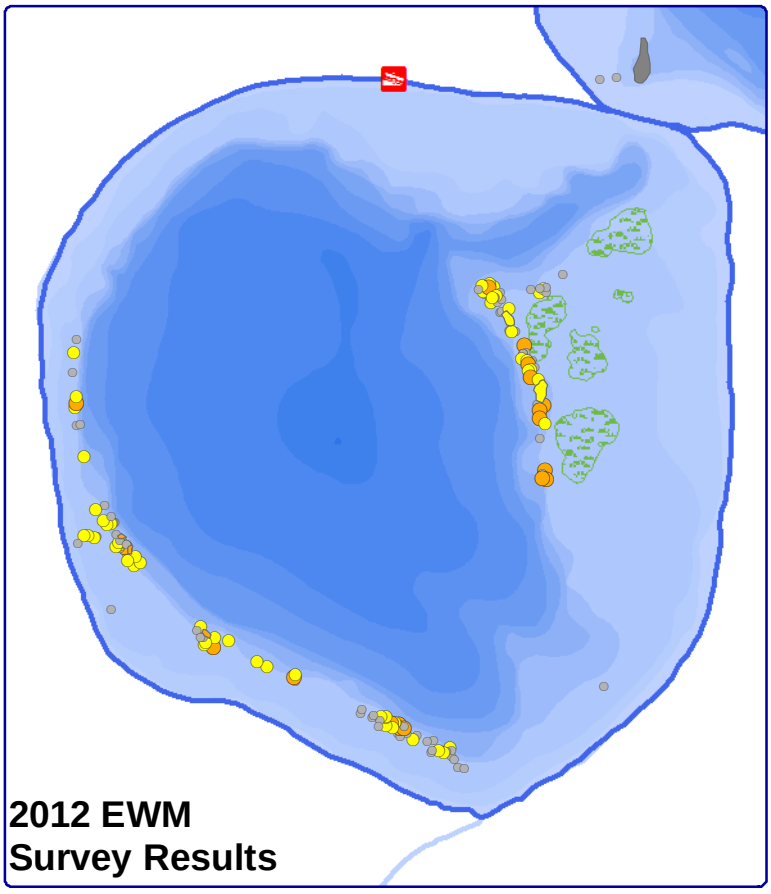
Project Location & Lake Boundaries



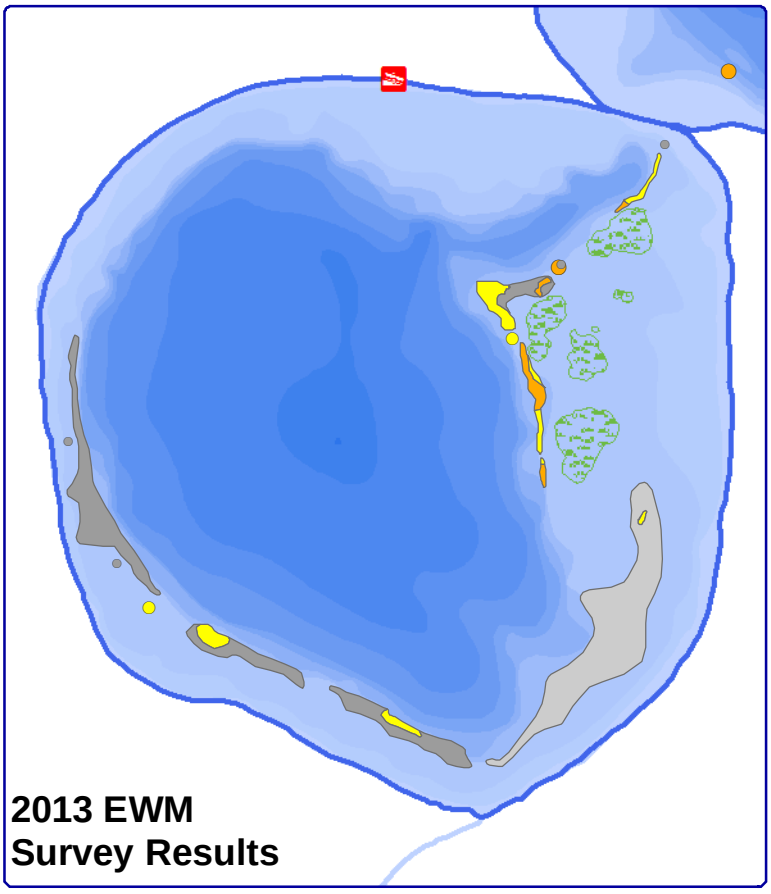
2010 EWM Survey Results



2011 EWM Survey Results



2012 EWM Survey Results



2013 EWM Survey Results

N
W E
S

1,500
Feet

Onterra LLC
Lake Management Planning
815 Prosper Road
De Pere, WI 54115
920.338.8860
www.onterra-eco.com

Sources:
Aquatic Plant Survey: Onterra, 2010-2013
Hydro & Bathymetry: WDNR

Map Date: December 30, 2013
Filename: MapX_STwn_EWMPB_2010-2013.mxd

Project Location in Wisconsin

Legend

- Highly Scattered
- Scattered
- Dominant
- Highly Dominant
- Surface Matting
- Single or Few Plants
- Clumps of Plants
- Small Plant Colony

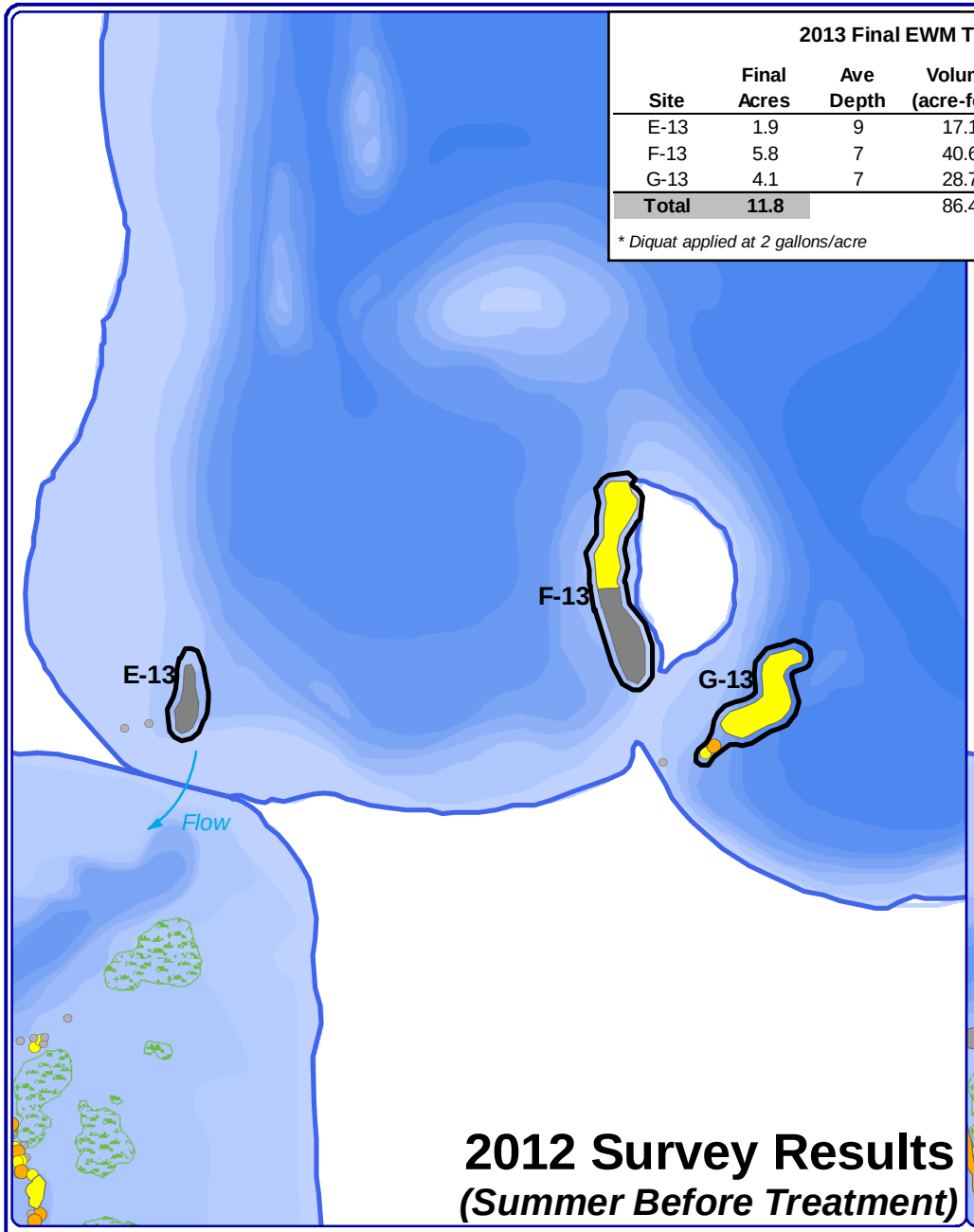
Map 2
South Twin Lake
Vilas County, Wisconsin

2010-2013 EWM Distribution

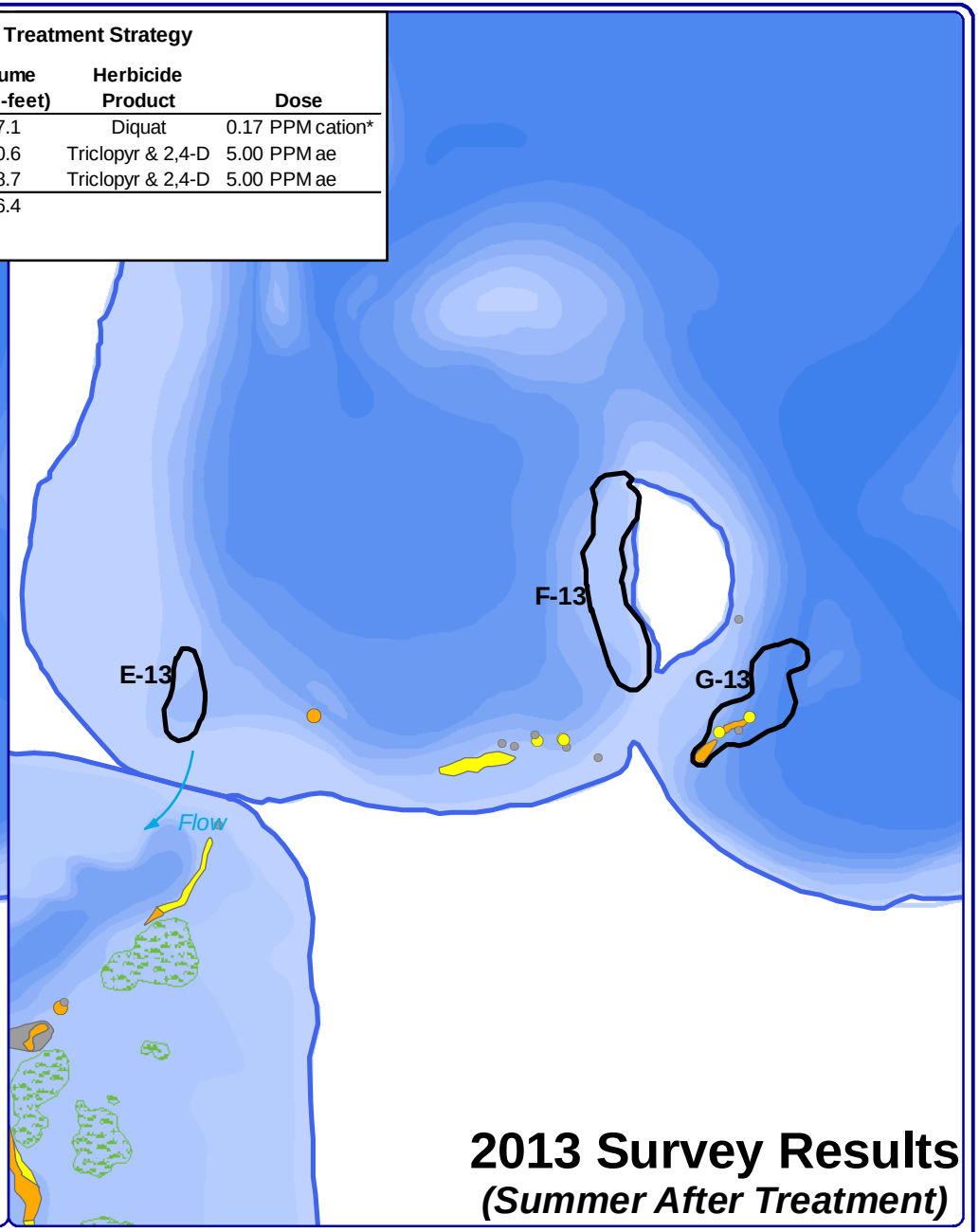
2013 Final EWM Treatment Strategy

Site	Final Acres	Ave Depth	Volume (acre-feet)	Herbicide Product	Dose
E-13	1.9	9	17.1	Diquat	0.17 PPM cation*
F-13	5.8	7	40.6	Triclopyr & 2,4-D	5.00 PPM ae
G-13	4.1	7	28.7	Triclopyr & 2,4-D	5.00 PPM ae
Total	**11.8**		86.4		

** Diquat applied at 2 gallons/acre*



2012 Survey Results
(Summer Before Treatment)



2013 Survey Results
(Summer After Treatment)

N W E S

1,250

Feet

Onterra LLC
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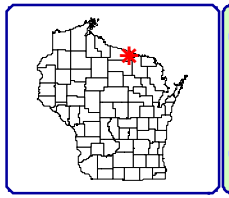
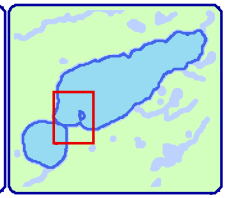
Sources:
Roads and Hydro: WDNR
Bathymetry: WDNR, digitized by Onterra
Aquatic Plants: Onterra, 2012-13
Map Date: January 15, 2014
Filename: Map3_NTwn_2013TreatResults.mxd



Project Location in Wisconsin



Extent of Large Map Shown in Red

Legend

- Highly Scattered
- Scattered
- Dominant
- Highly Dominant
- Surface Matting
- Single or Few Plants
- Clump of Plants
- Small Plant Colony
- Hardstem Bulrush Colony *(Summer 2011)*
- Spring 2013 Treatment Area

Map 3

North Twin Lake

Vilas County, Wisconsin

2013 EWM Treatment Results

Wisconsin Department of Natural Resources
Grant Project
Resolution

RESOLUTION OF North & South Twin Lakes Riparian Association
Vilas County, Wisconsin

WHEREAS The North and South Twin Lakes, Vilas County, are an important resource used by the public for recreation and enjoyment of natural beauty; and

WHEREAS we recognize that a well-planned and holistic lake *and* aquatic invasive species management project will better the lake now and for future users, and

WHEREAS the control and prevention of aquatic invasive species are important to the health and well-being of the lake; and

WHEREAS we are qualified to carry out the responsibilities of the planning project

IT IS, THEREFORE, RESOLVED THAT:

The **North & South Twin Lakes Riparian Association (NSTLRA)** requests the funds and assistance available from the Wisconsin Department of Natural Resources under and

HEREBY AUTHORIZES **Charles A Pederson** to act on behalf of the **NSTLRA** to: submit an application to the State of Wisconsin for financial aid for monitoring, planning and education purposes; sign documents; and take necessary action to undertake, direct, and complete an approved grant.

BE IT FURTHER RESOLVED THAT the **NSTLRA** will meet the obligations of the planning project including timely publication of the results and meet the financial obligations under this grant including the prompt payment of our **50%** commitment to project costs.

We understand the importance of a continuing management program for **North and South Twin Lakes** and intend to proceed on that course.

Adopted this _____ day of _____, 20____

By a vote of: _____ in favor _____ against _____ abstain

BY: _____
(Signature)

Printed Name: _____

Title: _____

Aquatic Invasive Species Control Grants **Established Population Control Ranking Questions** **36** Maximum Points	**Ranking Points**	**Score**	
A. The degree to which the project includes a prevention and control strategy. **(6 points possible)**			
1) The water being controlled has, or the project includes, a Clean Boats, Clean Waters watercraft inspection program per the requirements of s. NR 198.22 (1)(d) or an approved Alternative Equivalent (see guidance).	2 points	2	200 hours paid through Vilas County's program, within separate grant
2) The project will conduct other complimentary source containment activities that go above and beyond minimum level of inspection and signage e.g. boat washing or cleaning stations, augmented enforcement.	2 points	2	Car Wash Tokens and/or mobile boat washing station.
3) The water being controlled has, or the project will train, volunteers to identify AIS and conduct water body surveillance monitoring for early detection using accepted WDNR or citizen-based monitoring (CLMN/Project RED, etc) protocols where data is being entered into SWIMS.	2 points	2	Volunteers have been trained in past by Onterra. This would be a coordinated program by Onterra with volunteers, association-owned GPS, and actions addressed within annual treatment report
B. The degree to which the project will prevent the spread of aquatic invasive species. (7 points possible)			
1a) The control activity will take place on a Statewide AIS Source Water listed on the following table.	5 points	got 1b	
OR			
1b) The control activity will take place on a major AIS source water with high public use (lakes greater than 500 acres and all boat-able rivers that meet or exceed the minimum boating access criteria in NR 1.91(4) or wetlands greater than 500 acres in public ownership) or the project includes a Statewide AIS Source Water where less than 50% of the activities are directed.	4 points	4	Is greater than 500 acres and has adequate public access.
OR			
1c) The control activity takes place on a significant AIS source water with high public use (lakes between 500 and 100 acres and all rivers that meet or exceed the minimum boating access criteria in NR 1.91(4); wade-able streams with public access or wetlands between 500 and 100 acres in public ownership.	3 points	got 1b	
OR			
1d) The control activity takes place on an a minor AIS source water (lakes less than 100 acres that meet or exceed the minimum boating access criteria in NR 1.91(4); any river or stream with public access or wetlands less than 100 acres in public ownership).	2 points	got 1b	
2) The project will control a NR40 prohibited species e.g. Hydrilla, yellow floating heart, spiny water flea, red swamp crayfish, etc.	2 points	0	EWM is a restricted species, not a prohibited species
C. The degree to which the project protects or improves the aquatic ecosystem's diversity, ecological stability or recreational uses. (3 points possible)			
1) Project plan implementation includes stocking or planting to reintroduce native (plant) community species or implements other actions or changes in management strategies that will provide added protection to native species beyond herbicide treatments alone.	2 points	0	
2) Project area has a high degree of native biodiversity or is critical habitat, as expressed by: ● an above eco-region average aquatic or wetland plant FQI ● the presence of a listed aquatic species (NHI endangered, threatened or watch) ● is an ERW or ORW water ● has a Sensitive Area or Critical Habitat designation ● is within or adjacent to a State Natural Area, State Park, other publicly owned unique natural area or such an area owned/managed by a nonprofit conservation organization (e.g., Nature Conservancy).	1 point	1	Has a high FQI & number of native species South Twin 2011 FQI=32.5 North Twin 2011 FQI=34.1
D. The stage of the infestation in the water body. (4 points possible)			
1) Project addresses a pioneer population (as defined by s.198.12 (8)), or was a past early response project.	2 points	0	Neither
2) The target species is low in density and still at a controllable level as determined by being found in 25%, or less, of the colonizable area of the project water body (e.g. only the littoral zone of a lake can be colonized by EWM).	1 point	1	much less than 25%
3) It is well documented (P/I surveys or GIS mapping, verified) that the target species is a rapidly expanding population (doubling annual increase in areal coverage or FOO). Population is still under 25% threshold above.	1 point	1	Rapid Expansion in South Twin lake comparing 2011 and 2012 surveys (see Map 2). Even though the numbers are still quite small, the 2013 PI data indicated that EWM was at 3.2% LFOO, over 875% higher than 0.3% LFOO in 2011.
E. The degree to which the project will be likely to result in successful long-term control. (4 points possible)			
1) As also included in the approved management plan, the project employs multiple strategies (for the same species) to achieve and maintain control objectives. [e.g. hand pulling in combination with chemical treatment and biocontrol, draw downs, etc.]	2 points	2	The previous phases employs herbicide treatment strategies, this phase employs only professional-based hand-harvesting efforts. Subsquent phase may employ both strategies.
2) The sponsor has had a pre-application grant scoping consultation with the Department and the application is consistent with the results of those discussions.	1 point	1	Numerous correspondences
3) There is a low risk of reestablishment and spread after control activity occurs. All of the following apply: the project site is not impounded; is not tributary to or connected to any other AIS populated water and; the entire AIS population is being targeted for control.	1 point	1	Contains a very small water control structure, but wouldn't be considered an impoundment as only a small portion of its volume is caused by the dam. Downstream and upstream lakes do not have EWM

Aquatic Invasive Species Control Grants **Established Population Control Ranking Questions** **36** Maximum Points	**Ranking Points**	**Score**	
F. The availability of public access to, and public use of, the water body. (2 points possible)			
1) Any lake of 100 surface acres or greater and any boat-able river that has more than the minimum public boating access as defined in s. NR 1.91(4) or any wetland greater than 50 acres in public ownership.	1 point	1	South Twin 20 spaces North Twin Lakota Road - 35 spaces Town of Phelps - 35 spaces
2) The water provides significant alternative public access and use opportunities that include two of the following at separate locations: public swimming beach; park or other public land with accessible frontage; public fishing pier or wildlife observation area; two or more private resorts, youth camps or sportsmen clubs; or where more than 50% of the lake or river shore in the project area is in public ownership.	1 point	1	Multiple Resorts, two swimming beaches, 1 fishing pier, 1 ADA fishing pier, girls camp
G. The degree to which the proposed project includes or is complemented by other management efforts including watershed pollution prevention and control, native vegetation protection and restoration and other actions that help control aquatic invasive species or resist future colonization. (2 points possible)			
Applicant demonstrates that they have implemented, or been a significant participant in, or the project proposes, a shoreland restoration, habitat protection, sediment and nutrient control, water level management or other substantial lake stewardship activity (not including education or planning) that protects the lake ecosystem. (Score 1point per action, provide documentation).			
Activity 1	1 point	1	NSTLRA's role in Town of Phelps Renovation Project - native plantings and waterfront restoration oversight.
Activity 2	1 point	0	Need activity to get this point
2) The sponsor is a Green Tier Community Charter Member. (City of Middleton, Bayfield, Fitchburg, Appleton, Weston, Monona, Eau Claire, La Crosse, & the Village of Bayside)	1 point	0	
H. Community support and commitment, including past efforts to control aquatic invasive species. (5 points possible)			
1) This is demonstrated by requesting less than the maximum state share cost rate (cash costs) for the total project costs. No more than 25% of the project match can be in-kind or donated labor. The sponsor is requesting:			
65% State Share (1 point)	1 point	0	
OR			
50% State Share (2 point)	2 points	2	Selects this lesser state share
2) The project has financial support from additional management units, interest groups or organizations committing > 10% of the **hard cash local match**.	1 point	1	Phelps Town Lakes Committee annual donation of $2,000 is greater than 10% of hard cash local match
3) The sponsor conducted AIS control, consistent with their Department-approved plan, in the previous season ***without*** financial assistance from the State. They may have begun implementation without a grant or received grants in past but not the past season.	1 point	0	2013 herbicide treatment was under an AIS Grant
I. Whether the sponsor has previously received a grant for a similar project for the same water body. (2 points)			
1) There has not been an AIS Established Population Control grant for the same species in the same waterbody in the last five years.	2 points	0	This project is a continuation of a previously funded AIS Grant, however implementing a different control method
J. The degree to which the project will advance the knowledge and understanding of the prevention and control of aquatic invasive species. (1 point possible)			
1) Project has an evaluation component that will be conducted by an objective outside entity to assess project outcomes or is a participant in a Department-sponsored research and demonstration project on the AIS research priority list.	1 point	1	2015 PI Survey will be used in a primary literature publication by Sceince Services to evaluate the long-term control and selectivity of the 2009-2010 whole-lake treatment strategy on South Twin. Has third-party evaluation component.
		24	

Overview

	Category	**Points**
The degree to which the project includes a prevention and control strategy.	A	6 / 6
The degree to which the project will prevent the spread of aquatic invasive species.	B	4 / 7
The degree to which the project protects or improves the aquatic ecosystem's diversity, ecological stability or recreational uses.	C	1 / 3
The stage of the infestation in the water body.	D	2 / 4
The degree to which the project will be likely to result in successful long-term control.	E	4 / 4
The availability of public access to, and public use of, the water body.	F	2 / 2
The degree to which the proposed project includes or is complemented by other management efforts including watershed pollution prevention and control, native vegetation protection and restoration and other actions that help control aquatic invasive species or resist future colonization.	G	1 / 3
Community support and commitment, including past efforts to control aquatic invasive species.	H	3 / 5
Whether the sponsor has previously received a grant for a similar project for the same water body.	I	0 / 2
The degree to which the project will advance the knowledge and understanding of the prevention and control of aquatic invasive species.	J	1 / 1
		24 / 37