

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
AQUATIC INVASIVE SPECIES GRANT PROGRAM

Application Materials

***Squash Lake AIS Control &
Prevention Project: EWM
Hand-Harvesting 2014-2016***

Prepared for the

Squash Lake Association

February 1, 2014

Onterra, LLC
Lake Management Planning

INTRODUCTION

Squash Lake is a 395.8-acre lake with a mean depth of 20 feet and a maximum depth of 74 feet. The lake is located in the Towns of Crescent and Woodboro, Oneida County, Wisconsin (Map 1). There are two small state owned islands and one public boat landing which is located in and owned by the Town of Crescent. The Wisconsin Department of Natural Resources has identified Squash Lake in the Natural Heritage Inventory and has an Area of Special Natural Resources Interest designation. The lake's ecosystem is healthy and thriving and offers a diverse habitat for fish and wildlife.

In 2009, Eurasian water milfoil (EWM) was first discovered in Squash Lake. During September of that same year, Onterra, LLC staff mapped the extents of population. The results were presented to the Squash Lake Association (SLA) that autumn, along with herbicide treatment control options. After reviewing their options, the association decided to move forward with an intense hand-harvesting effort to battle the exotic in their lake.

Hand-harvesting, via paid divers and association volunteers, began during the 2010 growing season, have been carried through the growing seasons of 2011-2013. At the end of each season, Onterra staff returned to the lake to remap the EWM population. The hand-harvesting activities through 2013 have been funded with three Wisconsin Department of Natural Resource (WDNR) Aquatic Invasive Species (AIS) Early Detection and Response Grants.

In addition to creating a hand-harvesting program for Eurasian water milfoil, the SLA, being proactive in nature, forged a partnership with nearby Crescent and Julia Lakes to fund and manage an AIS Education, Prevention, and Planning Grant aimed at educating area lake users about AIS. This AIS Grant also funds Clean Boats Clean Waters watercraft inspections on all three lakes.

Beyond the issue of controlling Eurasian water milfoil in Squash Lake, the SLA entered into lake management planning project in order to ensure the preservation of Squash Lake for future generations. As described previously, the SLA is involved in numerous actions to preserve their lake; however, through the development of a lake management plan, they want to assure that they are working to preserve Squash Lake as an ecosystem, not just a recreational resource. For example, the SLA is interested in protecting the lake's natural shoreline areas, particularly around the southeastern bay. Overall, the SLA recognized the value of gaining a better understanding of the Squash Lake ecosystem and its current condition. In the end, the information obtained from these studies will help guide future SLA plans and programs.

PROBLEM IDENTIFICATION & GOALS

While Eurasian water milfoil has become more widespread in Squash Lake since its discovery in 2009, its abundance remains very low as evidenced by the 2012 point-intercept survey (EWM littoral occurrence of 0.4%) and the annual EWM Peak-Biomass Surveys. The fact that the majority of the EWM in Squash Lake remains comprised of single plants and clumps of plants can be attributed to aggressive hand-removal efforts that have been undertaken by the SLA annually since 2010. Squash Lake stakeholders are not in favor of the use of herbicides as a method of EWM control, as indicated by the 2012 stakeholder survey and the

SLA wants to continue managing the EWM within Squash Lake utilizing non-chemical (hand-removal) methods.

As discussed earlier, 75% of the cost of utilizing paid scuba divers to hand-harvest EWM in Squash Lake has been funded through WDNR AIS Early Detection and Response (EDR) Grants awarded to the SLA. In February 2013, the SLA received their final AIS-EDR Grant to fund hand-harvesting and associated monitoring through 2013. Because 2014 marks five years since EWM was discovered in Squash Lake, the EWM control program is transitioning from an EDR Program to an Established Population Control (EPC) Program.

No hand-harvesting program in Wisconsin has seen the level of organization and effort like that of the SLA and they continue to be a model for hand-harvesting programs in the state. However, the SLA understands that in order to be eligible for AIS-EPC funds, their program requires the creation of defined success criteria to assess the efficacy of hand-removal. The hand-removal methodology also needs to be optimized to ensure that the desired level of EWM control is reached while expending a reasonable amount of time and effort.

The objective of this management action is not to eradicate EWM from Squash Lake, as that is impossible with our current tools and techniques. The objective is to maintain an EWM population that exerts little to no detectable impacts on the lake's native aquatic plant community and overall ecology, recreation, and aesthetics. Monitoring is a key aspect of any AIS control project, both to prioritize areas for control and to monitor the strategy's effectiveness. The monitoring also facilitates the "tuning" or refinement of the control strategy as the control project progresses. The ability to tune the control strategies is important because it allow for the best results to be achieved within the plan's lifespan. It must be noted that hand-removal methodology is still experimental, and success criteria for assessing the efficacy of hand-removal have never been defined. Because of this, the following series of steps to manage EWM via hand-removal in Squash Lake should remain flexible to allow for modifications as the project progresses. The series includes:

1. A lake-wide assessment of EWM (Peak-Biomass Survey) completed while the plant is at or near its peak growth (late summer 2014-2017). This meander-based survey of the lake's littoral zone is designed to locate all possible occurrences of EWM, and the findings would be compared to results from the previous summer's Peak-Biomass Survey to assess the efficacy hand-harvesting.
2. Using EWM findings from the most recent Peak-Biomass Survey, professional ecologists will work with the SLA to delineate defined EWM hand-harvesting sites (Site A, B, etc.). The paid scuba divers will then be able to record the amount of hours (effort) spent within each site, allowing for a more accurate assessment of the level of effort spent within each area.

Colonized areas of EWM (polygons) exert the greatest ecological strain as they are the largest sources for future spread and displace valuable native plant species. Because of the level of EWM within these areas, a large amount of effort (hours) are needed to remove/reduce the EWM via manual hand-removal. Starting in 2014, the use of the Diver-Assisted Suction Harvest (DASH) system to target colonized areas of EWM in Squash Lake will be tested (see next Management Action). By targeting the largest

and densest areas of EWM with the DASH system, the SLA paid scuba divers will be able to focus their efforts on areas of EWM that are less dense and more suitable for manual hand-removal. The SLA paid scuba diver hand-removal sites would be categorized based upon the level of EWM within each area. Sites containing *small plant colonies* would be classified as areas requiring the greatest need for hand-removal, or primary focus sites, while areas containing *clumps of plants* and only *single or few plants* would be classified as secondary and tertiary focus sites, respectively.

3. Hand-removal efforts begin in the spring of 2014-2017.
4. A lake-wide assessment of EWM (Early-Season AIS Survey) would be completed in early June to reassess areas of EWM located during the previous year's Peak-biomass Survey to ensure the presence of EWM within these areas and refine/re-prioritize hand-removal areas if necessary.
5. If the SLA scuba divers locate additional EWM in areas that it was not located during the previous year's Peak-Biomass Survey or in the June ESAIS Survey, they may opt for an additional lake-wide assessment of EWM in July 2014-2017 by professional ecologists. This would allow for the most accurate picture of EWM within the lake and enable Onterra ecologists and SLA scuba divers to re-focus their efforts to different locations if necessary.
6. EWM Peak-Biomass Survey conducted to determine hand-removal efficacy and hand-removal sites/strategy for the following year. The crux of this activity is included within Step 1.
7. Reports generated on hand-removal success and recommendations for following year's strategy.

Normally, AIS control programs (mainly with herbicides) incorporate both established qualitative (EWM mapping) and quantitative (sub-sample point-intercept survey) evaluation methodologies. However, quantitative monitoring of hand-removal areas using sub-sample point-intercept methodology is likely not applicable at this time as there are no areas of EWM large enough to attain the number of sampling locations required to meet the assumptions of statistical analyses. Therefore, each hand-removal site would be monitored using qualitative methods.

The qualitative monitoring would be completed by comparing pre-hand-harvesting (summer before hand-harvesting) with post-hand-harvesting (summer immediately following hand-harvesting) EWM Peak-Biomass Surveys. An SLA manual hand-removal site will be deemed successful if the level of EWM is maintained at the point-based mapping level; for example, a site would be considered unsuccessful if it contained *single or few plants* (point-based mapping) prior to hand-harvesting and expanded to contain colonized EWM (polygons) following hand-harvesting. Sites of colonized EWM that will be targeted with the DASH system will be deemed successful if they are reduced by at least two density ratings (e.g. *highly dominant* to *scattered*) following the implementation of the DASH system.

In the final year of the project (2016), a whole-lake point-intercept survey would be conducted on Squash Lake to reassess the EWM population and native aquatic plant population at the lake-wide level. The results of these studies would be compared to studies conducted as part of this management planning project.

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				2016				2017		
	W	Sp	Su	F	W	Sp	Su	F	W	Sp	Su	F	W	Sp	Su
Early Season AIS Survey															
Hand-removal Coordination & GPS Basemap Creation															
Hand-harvesting Control Strategy Implementation															
EWM Peak-biomass Survey															
Annual Report															
Whole-lake Point-intercept Survey															
Community Mapping Survey															
Planning Committee Meeting															
Aquatic Plant Mangement Plan Update															
Project Wrap-up Meeting															

Early-Season AIS Survey (Late-Spring/Early-summer 2014-2016)

During these surveys, the entire littoral zone of Squash Lake would be searched for EWM. All incidences 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*. It is advantageous to complete this survey in the early summer because water clarity is typically better and the EWM is standing taller than most native species. All areas found to contain EWM would be reassessed during the peak-biomass survey described below.

Hand-removal Coordination & GPS Basemap Creation (Early-Summer)

To conduct a successful hand-harvesting control program, volunteers must be provided with up-to-date and accurate location data of the target species. For this project, EWM location data would be provided through regular surveys completed by both professionals and volunteers.

Each year, the SLA holds a volunteer training session at the Squash Lake boat landing, where Oneida County AIS Coordinator Michele Saduaskas and SLA member Stephanie Boismenuue conduct AIS identification training and monitoring for volunteers.

The SLA has purchased a hand-held GPS unit that is capable of supporting basemaps. An example is shown in Photo 1 where EWM colonies of varying densities (colored polygons) can be uploaded onto the lake group's GPS unit. The GPS unit would be updated following the early-season AIS survey each spring.

During the volunteer surveys, EWM plants would be marked with a GPS location and if applicable, targeted for hand-removal. During the subsequent EWM peak-biomass mapping survey, Onterra ecologists would visit all marked locations and assess the occurrence.

Volunteers conducting AIS surveillance monitoring would input all records into the online SWIMS database in accordance with CLMN protocols. This would include surveys where AIS were not identified. The SLA understands that this aspect needs to be completed in order to receive in-kind credit for these activities. SLA would be responsible for providing the deliverables (input into SWIMS, potentially a short narrative) for this aspect of the project.

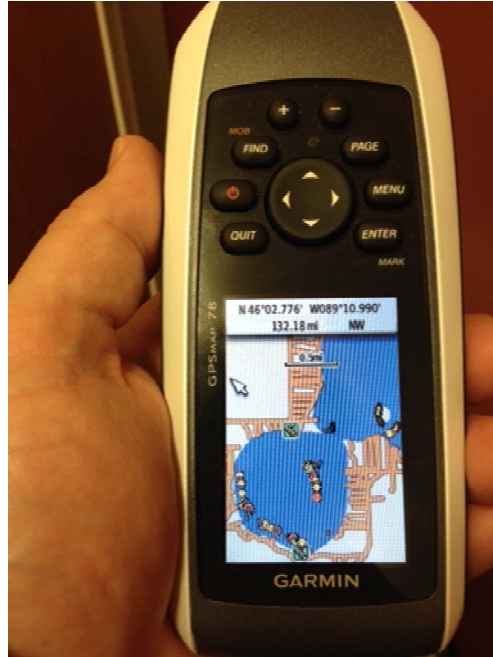


Photo 1. GPS unit with basemap. Showing North & South Twin Lake 2012 EWM survey results and 2013 treatment areas.

Professional Hand-Harvesting (Early-Summer)

As in past years, the harvesting activities would primarily be completed by trained, paid scuba divers. The divers would be assisted by SLA volunteers in both their sub-surface monitoring surveys and during the harvesting activities. Fish nets (Frabill Seine nets) would again be used to minimize fragment escape from harvest areas. New to the 2013 season, the harvesting efforts would also be recorded for each area using Map 2.

It is believed that integrating the professionally-operated Diver-Assisted Suction Harvesting (DASH) system into the SLA's hand-harvesting program may make the program more efficient and cost-effective. The DASH system involves scuba divers removing EWM plants by hand and feeding them into a suction hose attached to a pontoon boat for removal. It is believed that the DASH system will be able to remove/reduce areas of colonized EWM more efficiently than standard manual removal via scuba divers. SLA scuba divers experienced the use of the DASH system in Squash Lake in the summer of 2013 and found that it was an efficient method for removal of EWM in larger, colonized areas. By targeting the largest, densest areas of EWM with the DASH system, the SLA scuba divers will be able to focus their efforts on areas around the lake with less-dense EWM.

Summer EWM Peak-biomass Mapping Surveys (Late-summer)

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

waterbody. This survey would include a complete meander survey of the littoral zone by professional ecologists. As with the Early-Season AIS Survey, 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.

The result of the early-season AIS survey and the EWM peak-biomass survey will be documentation of the EWM population with the lake that year. These data will be compared against those collected during the previous year to allow a qualitative understanding of how the EWM population changed within the lake. Qualitatively, a successful control strategy would include a reduction of EWM density within the treatment areas as demonstrated by a decrease in two density ratings (e.g. *Highly Dominant* to *Scattered*).

Aquatic Plant Management Plan Update (2016-2017)

At the end of the proposed 3-year project, the SLA would have an updated Aquatic Plant Management Plan as an aspect of this project. This would allow the SLA to integrate the successes/limitation learned during the course of this project into a revised implementation strategy. The following components are included within the proposed project to complete this task:

- Whole-lake point-intercept survey
- Floating-leaf and emergent plant community mapping survey
- Planning Committee Meeting – Develop Implementation Plan

Point-intercept Survey Pretreatment Survey (Summer 2016)

The point-intercept method as described in Recommended Baseline Monitoring of Aquatic Plants in Wisconsin: Sampling Design, Field and Laboratory Procedures, Data Entry, and Analysis, and Applications (WDNR PUB-SS-1068 2010) would be used to complete this study. Based on guidance from the WDNR, a point spacing of 33 meters would be used, resulting in 1,478 points throughout the lake.

The point-intercept survey would be completed during the summer of 2016 and would be compared to the 2009 and 2012 point-intercept surveys. A Chi-square distribution analysis ($\alpha = 0.05$) would be used to determine which plant abundances are statistically different (increase or decrease) between the two surveys. The alpha value is set such that we consider the results statistically significant when the test is 95% confident that the results are truly different and non-random.

Community mapping survey (Summer 2016)

The point-intercept methodology is very useful for capturing the species richness and diversity of a submersed aquatic plant community. However, often the presence of emergent or floating-leaf vegetation is not adequately sampled with this survey type. Emergent and floating-leaf vegetation are often found within shallow reaches of a lake and thus can be hard to access in watercraft. To document the presence of these aquatic plant communities, a community mapping survey was conducted on Squash Lake in 2012. The proposed project would replicate this survey again in 2016. During the survey, emergent and floating-leaf aquatic plant communities would be documented with sub-meter accuracy GPS technology in two formats, point-based and polygon-based methods. A single GPS waypoint would be

taken at the location of smaller communities (less than 40 ft diameter or length) while polygons would be delineated around larger communities. Species presence would also be documented in order of most prevalent within the community to least prevalent.

STAKEHOLDER PARTICIPATION

Clean Boats Clean Waters Program

Currently the SLA monitors the public boat landing using training provided by the Clean Boats Clean Waters program. Squash Lake is an extremely popular destination for recreationalists and anglers given its proximity to Rhinelander, making it vulnerable to new infestations of exotic species. The intent of the boat inspections would not only be to prevent additional invasives from entering the lake through its public access point, but also to prevent the infestation of other waterways with invasives that originated in Squash Lake. 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 lakes and educating people about how they are the primary vector of its spread.

Due to the large number of activities that volunteers are called upon on Squash Lake (Hand-removing, AIS monitoring, stakeholder education, etc.), paid watercraft inspectors would be sought to monitor the Squash Lake's single public boat landing. In 2013, SLA volunteers monitored Squash Lake's boat landing for approximately 375 hours. The SLA will seek funds through the stream-lined CBCW WDNR Grant to cover the costs of the watercraft inspections annually.

Complementary Management Efforts

Dugan Squash Lake Nature Preserve

Squash Lake has taken a proactive approach to preserving areas of natural shoreline and natural habitat surrounding the lake when Patrick Dugan and Sue Hausserman-Dugan donated a 5.62-acre site comprised of undeveloped woodlands to the Northwoods Land Trust in 2009. This area also preserved approximately 4,088 feet of natural shoreline along a narrow esker peninsula on the southwest side of the lake.

Shoreland Habitat Restoration

As outlined within the SLA's management plan, a Board of Directors appointee will work with appropriate entities such as the Oneida County Land & Water Conservation Department to research grant programs, shoreland restoration techniques and other pertinent information that will help the SLA restore the Squash Lake shoreland. Because property owners may have little experience with or be uncertain about restoring a shoreland to its natural state, properties with restoration on their shorelands could serve as demonstration sites. Other lakeside property owners could have the opportunity to view a shoreland that has been restored to a more natural state, and learn about the maintenance, labor, and cost-sharing opportunities associated with these projects. The Board of Directors appointee will oversee/plan demonstration tours, as well as be a point-of-contact, for Squash Lake property owners who require more information on this topic.

Shorelands that are not already apart of the Dugan Squash Lake Nature Preserve should be prioritized for education initiatives and physical preservation. A Board of Directors appointed

person will work with appropriate entities to research grant programs and other pertinent information that will aid the SLA in preserving the Squash Lake shoreland. This would be accomplished through education of property owners, or direct preservation of land through implementation of conservation easements or land trusts that the property owner would approve of.

Frog Monitoring Program

The SLA recognizes that frogs are an important indicator of water quality and the overall environmental quality of Squash Lake, as well as an integral part of the aquatic and terrestrial ecosystems. Because of this, the SLA would like to initiate a volunteer-based frog monitoring program for the wetland on the southeast side of Squash Lake as part of the Wisconsin Frog and Toad Survey.

This citizen-based monitoring program is coordinated by the WDNR, United States Geological Survey (USGS), and North American Amphibian Monitoring Program (NAAMP), with a goal of determining the status and long-term trends of Wisconsin's frog species. Not only will the information on the frog species in Squash Lake be monitored on an annual basis, but the information gathered will contribute to the overall status of Wisconsin's frog populations.

The Wisconsin Frog and Toad Survey has established routes that volunteers regularly monitor. Volunteer monitors on Squash Lake will have to contact the Wisconsin Frog and Toad Survey and get on their waiting list for the creation of a new sampling route.

PROJECT DELIVERABLES

Annual Report

During the winter months of 2014-2016, a 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. All reports would be presented in electronic format via email.

Squash Lake Plant Management Plan Update

The final product for this project would be a single report that would include the methodologies and results of the tasks described above; a discussion concerning those results as they apply to the current health, rehabilitation, and protection of Squash Lake; and the full-color maps described in the Project Scope. Management, protection, enhancement alternatives and recommendations would be presented along with continued public education issues. The results of the planning committee meeting discussions would be incorporated into an updated Implementation Plan Section as it pertains to aquatic plant management on Squash Lake. If the SLA decides to also update water quality and watershed, they would require additional funding through the WDNR Lake Planning Grant program or the AIS Education, Planning, and Protection program.

Upon finalization of the report and acceptance by the WDNR, two hard copies and two electronic copies on CD would be provided to the SLA. The report would be made available electronically via email or other suitable venue for the WDNR and other interested parties.

Stakeholder Participation

The SLA 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 Communications & Administration		
General Communications & Administration	\$1,925.00	
Planning Meeting (Winter 2016/2017)	\$660.00	
Project Wrap-Up Meeting (Summer 2017)	\$430.00	
2014 EWM Monitoring (Year 1)		
Hand-removal Coordination & GPS Basemap Creation	\$285.00	
2014 Early-Season AIS Survey	\$1,945.00	
2014 EWM Peak-Biomass Survey - August/September	\$2,380.00	
2014 EWM Monitoring Report - Winter	\$720.00	
2015 EWM Monitoring (Year 2)		
Hand-removal Coordination & GPS Basemap Creation	\$285.00	
2015 Early-Season AIS Survey	\$1,945.00	
2015 EWM Peak-Biomass Survey - August/September	\$2,380.00	
2015 EWM Monitoring Report - Winter	\$720.00	
2016 EWM Monitoring (Year 3)		
Hand-removal Coordination & GPS Basemap Creation	\$285.00	
2016 Early-Season AIS Survey	\$1,945.00	
2016 EWM Peak-Biomass Survey - August/September	\$2,380.00	
2016 EWM and Comprehensive Monitoring Report - Winter	\$720.00	
2016 Comprehensive Aquatic Plant Surveys		
Point-Intercept Survey	\$4,035.00	
Aquatic Plant Community Mapping	\$1,530.00	
Data Analysis and Report	\$545.00	
Travel Costs	\$1,970.00	
<i>Monitoring and Stakeholder Participation Subtotal</i>	<i>\$27,085.00</i>	<i>\$0.00</i>
Professional Hand-Harvesting Services		
2014 Professional DASH Hand-Harvesting (16 hrs x \$200/hr)	\$3,200.00	
2015 Professional DASH Hand-Harvesting (16 hrs x \$200/hr)	\$3,200.00	
2016 Professional DASH Hand-Harvesting (16 hrs x \$200/hr)	\$3,200.00	
2014 Professional Hand-Harvesting (w/o DASH) (700 hrs x \$25/hr)	\$17,500.00	
2015 Professional Hand-Harvesting (w/o DASH) (700 hrs x \$25/hr)	\$17,500.00	
2016 Professional Hand-Harvesting (w/o DASH) (700 hrs x \$25/hr)	\$17,500.00	
<i>Professional Hand-Harvesting Subtotal</i>	<i>\$62,100.00</i>	<i>\$0.00</i>
Volunteer Efforts		
Volunteer EWM Monitors' Training (25 hrs x 3 years)		\$900.00
Volunteer EWM Monitoring, Harvesting, Diver-Assistance, AIS First Responders (260 hrs x 3 years)		\$9,360.00
Project Administration, Communications, Volunteer Coordination (275 hrs x 3 years)		\$9,900.00
Fuel and Oil for Harvesting Boat	\$1,800.00	
Clean Boats Clean Waters		
Paid Monitors	<i>Within Separate Grant</i>	
<i>Volunteer Efforts Subtotal</i>	<i>\$1,800.00</i>	<i>\$20,160.00</i>
Project Subtotals	\$90,985.00	\$20,160.00
Total Project	\$111,145.00	
State Share Requested (65%)	\$72,244.25	

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		To determine your legislative district, go to http://165.189.139.210/WAML/ Type in complete address, next screen shows information
Senate	Assembly	
12	34/35	

Section II: Applicant Information

Applicant			Type of Eligible Lake or River Applicants			
Squash Lake Association			<input type="checkbox"/> County	<input type="checkbox"/> Tribe	<input type="checkbox"/> Other Gov't Unit	<input type="checkbox"/> Federal
Waterbody Name			<input type="checkbox"/> City	<input type="checkbox"/> Sanitary Dist.	<input type="checkbox"/> Nonprofit Org.	<input type="checkbox"/> State
Squash Lake			<input type="checkbox"/> Village	<input type="checkbox"/> Dist.	<input type="checkbox"/> College, School, etc.	<input type="checkbox"/> Other
Project County/Township/Section/Range			<input type="checkbox"/> Town	<input checked="" type="checkbox"/> Assoc.		
Oneida/T36N/R07E/S24						
Authorized Representative Named by Resolution			Project Contact Name			
Stephanie Boismenu			Tim Hoyman			
Authorized Representative Title			Project Contact Title			
Volunteer AIS Coordinator and EWM Harvesting Project Coordinator			Aquatic Ecologist; Onterra, LLC			
Address			Address			
138 South Stevens St.			815 Prosper Road			
City	State	ZIP Code	City	State	ZIP Code	
Rhineland	WI	54501	De Pere	WI	54115	
Daytime Phone (area code)	Evening Phone (area code)		Daytime Phone (area code)	Evening Phone (area code)		
(715) 282-5079	(715) 282-5079		920.338.8860			
E-Mail Address			E-Mail Address			
stephboismenu.squashlake@hotmail.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 <input type="checkbox"/> Yes <input type="checkbox"/> No	Environmental Grants Specialist Approval / Date	
Eligible Project <input type="checkbox"/> Yes <input type="checkbox"/> No	Eligible Applicant <input type="checkbox"/> Yes <input type="checkbox"/> No	Project Priority Rank	Research / Demo Project <input type="checkbox"/> Yes <input type="checkbox"/> No
Prior Grant Award(s) <input type="checkbox"/> Yes <input type="checkbox"/> No	Fiscal Year(s)	Amount Received to Date \$	Project Awarded <input type="checkbox"/> Yes <input type="checkbox"/> No

Section III: Project Information

Project Title Squash Lake AIS Control & Prevention Project: Hand Harvesting 2014-2016	Proposed Ending Date June 30, 2017
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Other Management Units	Letter of Support	Other Management Units	Letter of Support
1. Town of Crescent	<input type="checkbox"/>	4. Town of Conover	<input type="checkbox"/>
2. Town of Woodboro	<input type="checkbox"/>	5.	<input type="checkbox"/>
3. Oneida County LWCD	<input type="checkbox"/>	6.	<input type="checkbox"/>

Section IV: Public Access

Number of Public Vehicle Trailer Parking Spaces Available at Public Access Sites: 16

Number of Public Access Sites Including Boat Launches and Walk-ins: 1 main landings

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	\$27,085.00		
3. Purchased services: Professional Hand-Harvesting	\$62,100.00		
4. Other purchased services (specify) :			
5. Plant material			
6. Supplies (specify): Fuel & Oil for Harvesting Boat	\$1,800.00		
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		\$20,160.00	
12. Subtotals (Sum each column)	\$90,985.00	\$20,160.00	
13. Total Project Cost Estimate (sum of column 1 plus sum of column 2)	\$111,145.00		
14. State Share Requested (up to 75% of total costs may be requested)	\$72,244.25		

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:

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 not 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

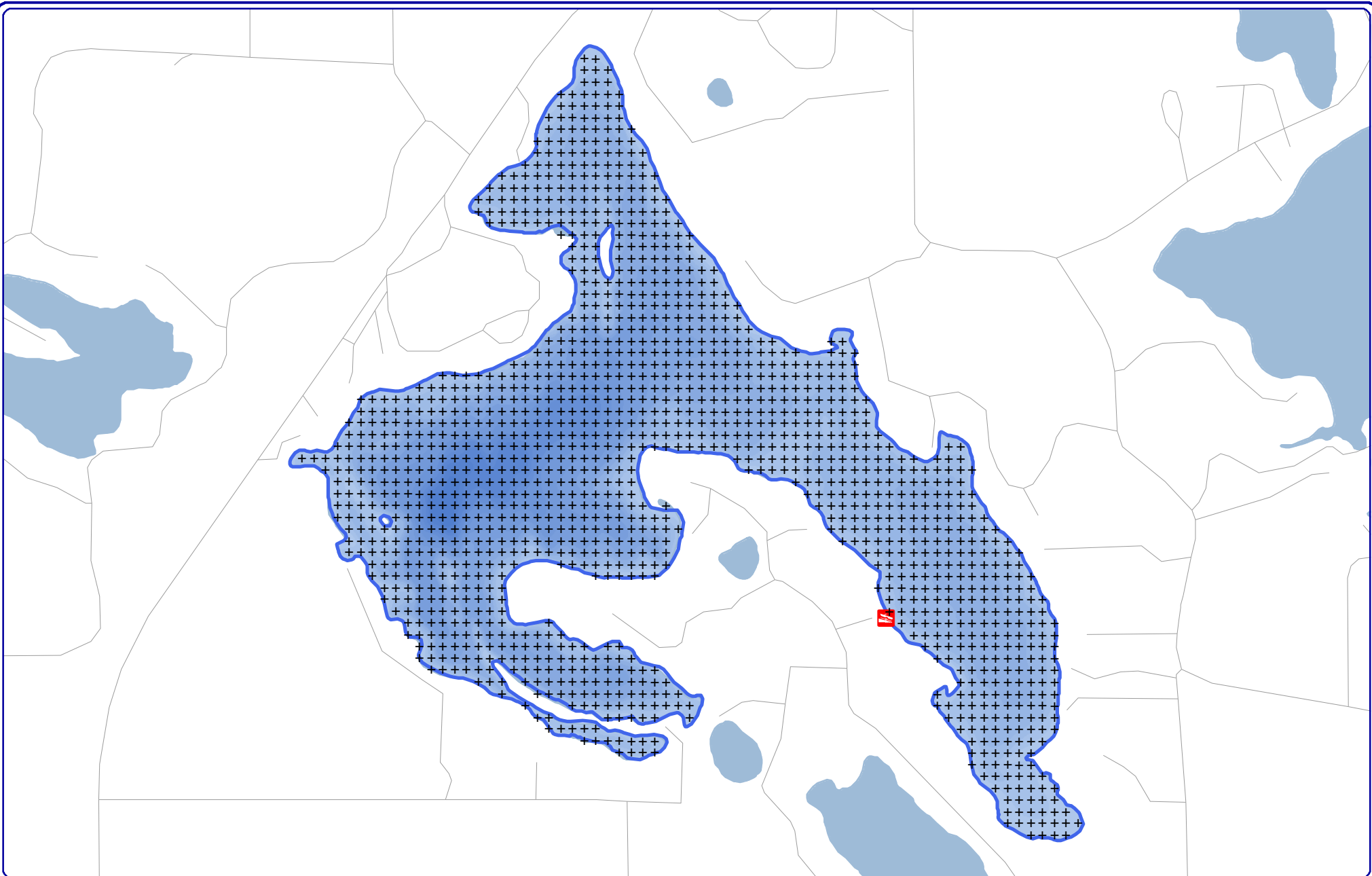
I certify that information on this application and all its attachments are true and correct and in conformity with applicable Wis. Statutes

Print/Type Name of Authorized Representative
Stephanie Boismenu

Title of Authorized Representative
Volunteer AIS Coordinator and EWM Harvesting Project
Coordinator

Signature of Authorized Representative

Date Signed



1,200



Feet

Onterra LLC
Lake Management Planning

815 Prosper Rd.
De Pere, WI 54115
920.338.8860
www.onterra-eco.com

Sources:
Roads and Hydro: WDNR
Map Date: February 25, 2013
File Name: Map1_Squash_location.mxd



Project location shown in red.

Legend



Squash Lake ~ 396 acres
WDNR Definition

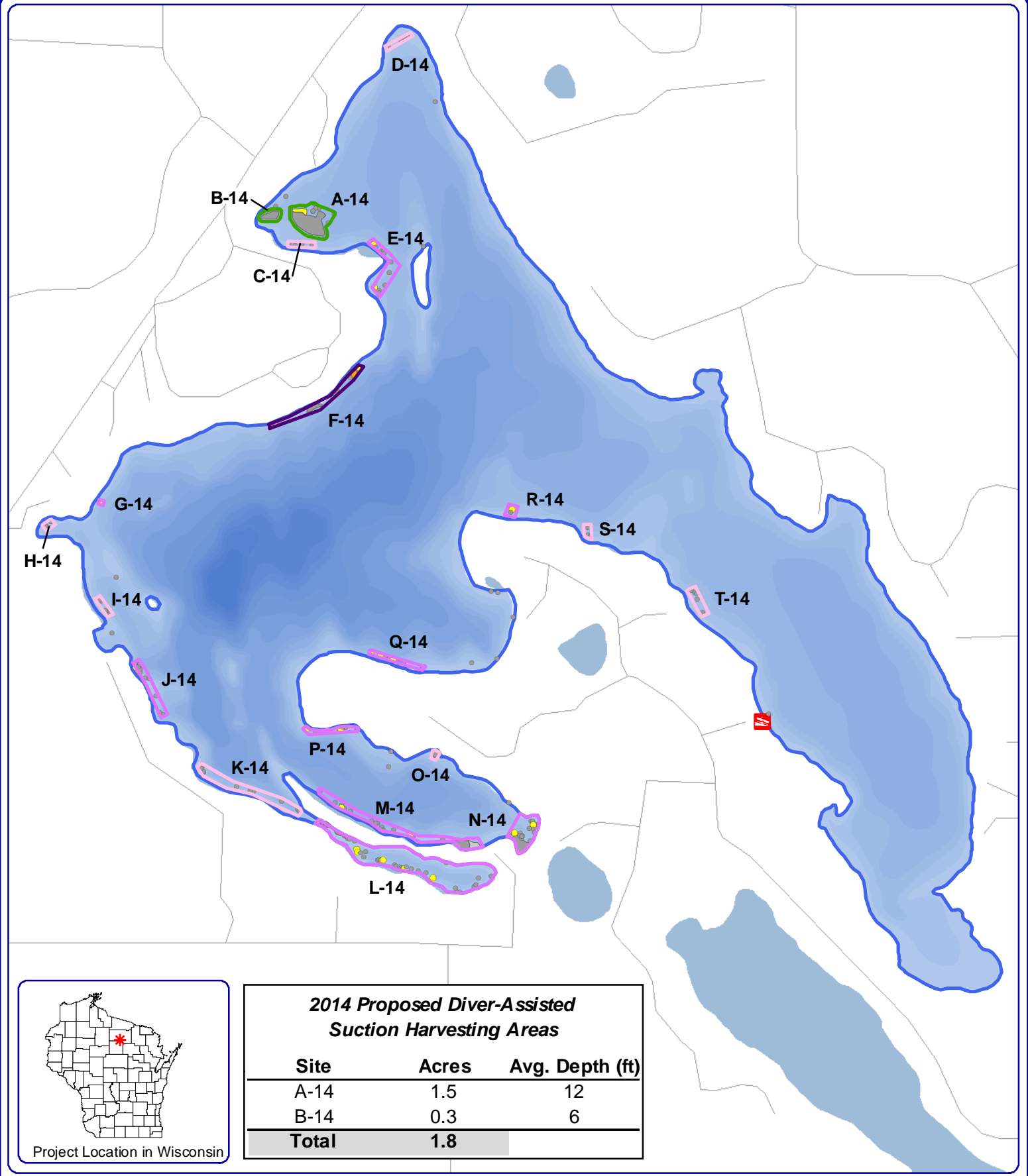


Point-Intercept Survey Location
33-meter spacing, 1,478 total points

Map 1

Squash Lake
Oneida County, Wisconsin

Project Location



2014 Proposed Diver-Assisted Suction Harvesting Areas

Site	Acres	Avg. Depth (ft)
A-14	1.5	12
B-14	0.3	6
Total	1.8	

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www.onterra-eco.com

Sources:
Roads and Hydro: WDNR
Bathymetry: WDNR 1975; digitized by Onterra
Aquatic Plants: Onterra, 2013
Map Date: October 11, 2013
Filename: Map15_Squash_EWM_Sep13.mxd

Legend

Large EWM Community	Small EWM Community	Diver-Assisted Suction Harvest Area
Highly Scattered	Single or Few	SLA Diver Hand-Removal Area - Primary Focus
Scattered	Clumps of Plants	SLA Diver Hand-Removal Area - Secondary Focus
Dominant	Small Plant Colony	SLA Diver Hand-Removal Area - Tertiary Focus
Highly Dominant		
Surface Matting		

Map 2
Squash Lake
Oneida County, Wisconsin
2014 Proposed Hand-removal Areas

**Wisconsin Department of Natural Resources
Grant Project
Resolution**

**RESOLUTION OF
Squash Lake Association, Inc.
Oneida County, Wisconsin**

WHEREAS Squash Lake, Oneida County, is 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:

Squash Lake Association, Inc. requests the funds and assistance available from the Wisconsin Department of Natural Resources under and

HEREBY AUTHORIZES **Stephanie Boismenu** to act on behalf of **Squash Lake Association, Inc.** 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 **Squash Lake Association, Inc.** 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 applicable **35%** commitment to project costs.

We understand the importance of a continuing management program for **Squash Lake** and intend to proceed on that course.

Adopted this _____ day of _____, 20____

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

BY: _____
Craig Zarley, Vice President
Squash Lake Association, Inc.

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 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	0
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 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. OR	5 points	got 1c
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. OR	4 points	got 1c
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). OR	3 points	3 Is between 100 and 500 acres and has adequate public access.
1d) The control activity takes place on an 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 1c
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 <u>added</u> 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: <ul style="list-style-type: none"> • 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 & Vasey's pondweed
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	2 Continuation of AIS-EDR projects
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	0 Control efforts are keeping from expanding
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 Employs 3 tiers of hand-harvesting techniques: 1: Volunteers 2: SLA hired divers 3. Divers from a 3rd party firm
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 Not impounded or directly connected to AIS-infested water bodies

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	Needs to have 13 or more parking spaces	
2) The water provides significant alternative public access and use opportunities that include <u>two</u> 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	??	
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 1 point per action, provide documentation).				
Activity 1	1 point	1	SLA's participation of conserving over 4,000 feet of shoreland in a conservation trust	
Activity 2	1 point	1	SLA has agreed to have the board appoint a person to continually research grants and other programs to protect their shorelands	
Activity 3		extra	Frog Monitoring Program	
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) OR 50% State Share (2 point)				
	1 point	1	Selects this lesser state share	
	2 points	0		
2) The project has financial support from additional management units, interest groups or organizations committing > 10% of the hard cash local match .				
	1 point	0		
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	Have Received Past Grants to cover control strategy costs	
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	2	First AIS-EPC Grant	
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	Extensive Hand-harvesting projects should be a WDNR priority. Efforts are monitored by an objective 3rd party	

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Overview		
Category	Points	
The degree to which the project includes a prevention and control strategy.	A	4 / 6
The degree to which the project will prevent the spread of aquatic invasive species.	B	3 / 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	3 / 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	2 / 3
Community support and commitment, including past efforts to control aquatic invasive species.	H	1 / 5
Whether the sponsor has previously received a grant for a similar project for the same water body.	I	2 / 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

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