

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
AQUATIC INVASIVE SPECIES GRANT PROGRAM

Application Materials

*Little Bearskin Lake
Hybrid Water Milfoil Monitoring &
Control Strategy Development
2014 - 2015*

Prepared for the

Little Bearskin Lake Association Inc.

February 1, 2014

Onterra, LLC
Lake Management Planning

INTRODUCTION & PROJECT GOALS

The WDNR's point-intercept surveys revealed that the hybrid water milfoil population in terms of its occurrence in Little Bearskin Lake is variable on an annual basis. HWM saw a statistically valid increase in littoral occurrence from 2010-2011, but declined from 2011-2012 to levels observed in 2009 and 2010. The 2012 Peak-Biomass Survey indicated that Little Bearskin Lake contained approximately 65 acres of colonized HWM. At present, the HWM population is the most pressing issue Little Bearskin Lake faces to its ecology, recreation, and aesthetics.

As discussed in the Little Bearskin Lake draft management plan, following the results of the UW-Extensions first year of weevil study in 2013 on Little Bearskin Lake, the researchers have decided to not reapply weevils to the beds of HWM in 2014. While the LBLA had originally agreed to postpone any management actions of HWM within the lake through 2015 as to not confound the weevil study, with the new revelations of the weevil study, it is recommended within the draft plan that the HWM population be reassessed in 2014 and a strategy for its management be developed following that assessment.

The project proposed here is called for within the Little Bearskin Lake Management Plan; specifically in "Management Goal 2: Reassess Hybrid Water Milfoil Population in 2014 and Prevent Aquatic Invasive Species Introduction to and Spread from Little Bearskin Lake." The first action within Goal 2 is to "Reassess hybrid water milfoil population in Little Bearskin Lake in 2014 and revisit management Strategy for 2015." This project would complete that action with plant surveys being completed during the summer of 2014 and a Planning Committee meeting occurring in early fall to develop applicable control strategies to begin in spring 2015. The project also includes monitoring of those control actions during the summer of 2015 and the development of further actions for 2016. If no control action is slated for 2015, the 2015 surveys would still be completed and used to develop control alternatives for 2016.

PROJECT SCOPE

Hybrid Water Milfoil Peak-Biomass Survey

As the name implies, the HWM 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 Little Bearskin Lake, this survey would likely take place between mid-August and mid-September, each year. This survey would include a complete meander survey of Little Bearskin Lake's littoral zone.

Hybrid Water Milfoil Challenge Testing

The concept of heterosis, or hybrid vigor, is important in regards to HWM management on Little Bearskin Lake. The root of this concept is that hybrid individuals typically have improved function compared to their pure-strain parents. HWM typically has thicker stems, is a prolific flowerer, and grows much faster than pure-strain EWM (LaRue et al. 2012). These conditions likely contribute to this plant being particularly less susceptible to biological (Enviroscience personal comm.) and chemical control strategies (Glomski and Netherland 2010, Poovey et al. 2007). Data gathered from whole-lake 2-4,D treatments in Wisconsin during 2009-2013 suggest that treatments on lakes with populations of HWM were not as successful when compared to lakes with pure strains of EWM. In other words, it appears that some strains of HWM, but not

all, are more tolerant of 2, 4-D treatments than pure strain Eurasian water milfoil, at acceptable whole-lake treatment concentrations. HWM can be controlled by 2,4-D, but the concentrations required to do so would also impact native aquatic plants beyond reasonable levels. To determine if the HWM in Little Bearskin Lake consists of 2,4-D tolerable strains, specific studies, termed “Challenge Testing” would be completed by SePRO, one of the companies that produces 2,4-D, as well as other aquatic and terrestrial herbicides.

During the HWM Peak-Biomass Survey, Onterra staff would collect approximately 600 live strands of HWM from Little Bearskin Lake and send to SePRO for herbicide challenge testing. Cultures of these plants would be grown, and then experimental groups would be challenged by exposing them to varying concentrations of 2,4-D amine, triclopyr, and fluridone. Results of these experiments would aid in determining the proper control strategy for Little Bearskin Lake.

Point-intercept Survey

The WDNR has completed annual point-intercept surveys on Little Bearskin Lake since 2009 and it is expected that these surveys would continue during 2014 and 2015. The results of those surveys would be utilized in the monitoring of native aquatic plants and EWM within Little Bearskin Lake as well as the development of a control strategy.

If the WDNR stops completing the annual surveys, Onterra would complete the survey during the late summer of either or both years. Partial funding for those surveys would be obtained through an amendment to the AIS-EPP Grant slated for application during February 2014 or through an additional grant application. However, it is unlikely that the WDNR will not continue with completing the surveys during 2014 and 2015.

Planning Meeting

Following the completion of the 2014 plant surveys, Onterra staff would meet with the Little Bearskin Planning Committee to discuss the survey results and control alternatives, if needed. This meeting would be conducted on a week day near Little Bearskin Lake.

Annual Monitoring Report

An annual report would be completed each detailing that summer’s results and the planned approach for control during the following year. The 2014 report would be completed in early fall, while the 2015 report would likely be completed later, during the winter.

Clean Boats Clean Waters Inspector Training

Currently, the LBLA does not conduct watercraft inspections under the Clean Boats Clean Waters Program. The LBLA understands that this is an important program for any lake whether they are currently managing AIS or not. Completion of these inspections would pertain to the second action of Management Goal 2 within the lake’s management plan. In preparation, members of the LBLA would participate in an inspector training course during 2014. The trained volunteers would the recruit other volunteers to receive training and conduct inspections to begin in 2015.

Volunteer AIS Monitor Training

To conduct a successful volunteer-based AIS monitoring program, volunteers must be provided with up-to-date and accurate location data of the target species and control areas. For this project, due to the level of occurrence, HWM location data would be provided through regular surveys completed primarily by professionals. However, should a whole-lake HWM treatment be completed in the near future on Little Bearskin Lake, and assuming it would be as successful as earlier treatments using the same strategy on other lakes, the level of HWM occurrence would be reduced to levels that volunteer monitoring, and possibly hand-harvesting, would be applicable. Therefore, within this proposed planning project, LBLA volunteers would be trained to utilize a grant-purchased GPS unit (Photo 1) in preparation for future use.



Photo 1. GPS unit with example basemap. Long Lake, Vilas County.

An additional benefit of the GPS unit purchase and training for this project would be the educational value of having LBLA members visiting the HWM colonies mapped by Onterra during the summer of 2013. This would raise their understanding of what the density designations mean on the maps Onterra produces and create more realistic expectations of control strategies.

The LBLA would purchase a Garmin GPS Map78. This specific unit allows for Onterra staff to create and load alternate background maps (basemaps) for display during volunteer surveys. An example is shown in Photo 1 where HWM colonies of varying densities (colored polygons) along with herbicide treatment areas (black outlined-polygons) can be uploaded onto the lake group's GPS unit. For this project, the GPS basemap would be updated initially with the 2013 peak-biomass results and then again after the HWM Peak-Biomass Survey.

Volunteers receiving training and conducting AIS surveillance monitoring would input all records into the online SWIMS database in accordance with CLMN protocols. The LBLA understands that this aspect needs to be completed in order to receive in-kind credit for these activities.

PROJECT TIMELINE

Task	2014				2015					
	W	Sp	Su	F	W	Sp	Su	F		W
AIS-EPC Grant Application	■									
EWM Peak-biomass Survey			■					■		
Point-intercept Survey (WDNR)										
Planning Meeting			■					■		
Annual Report				■					■	■

PROJECT COST BREAKDOWN

	Cash Costs	Donated Value
Monitoring and Stakeholder Participation		
2014 HWM Monitoring, Reporting, & Strategy Development (Year 1)		
2014 HWM Peak-biomass Survey	\$1,885.00	
2014 HWM Speciman Collection for Challenge Testing	\$620.00	
2014 WDNR Point-Intercept Survey Data Integration	\$75.00	
2014 HWM Monitoring Report	\$340.00	
2014 Planning Meeting & Strategy Development	\$1,165.00	
2015 HWM Monitoring, Reporting, & Strategy Development (Year 2)		
2015 HWM Peak-biomass Survey	\$1,885.00	
2015 WDNR Point-Intercept Survey Data Integration	\$75.00	
2015 HWM Monitoring Report	\$340.00	
2015 Strategy Development (no meeting)	\$430.00	
Project Administration & Communication	\$1,015.00	
Travel - Mileage (0.58/mile)	\$630.00	
Other Fees		
SePro HWM Challenge Testing	\$2,770.00	
GPS Map78 Purchase	\$300.00	
Volunteer Efforts		
Clean Boats Clean Waters Monitoring & Training		
Volunteers (45 hrs x 2 yr)		\$1,080.00
Volunteer AIS Monitoring and Training		
Volunteers (20 hrs x 2 yr)		\$480.00
Grant Administration		
Volunteers (10 hrs x 2 yr)		\$240.00
<i>Project Subtotals</i>	\$11,530.00	\$1,800.00
Total Project	\$13,330.00	
State Share Requested (75%)	\$9,997.50	
Local Match (25%)	\$3,332.50	

LITERATURE CITED

- Glomski, L.M. and M.D. Netherland. 2010. Response of Eurasian and Hybrid Watermilfoil to Low Use Rates and Extended Exposures of 2,4-D and Triclopyr. *J. Aquat. Plant Manage.* 48: 12-14.
- LaRue, E.A, M.P. Zuellig, M.D. Netherland, M.A. Heilman, and R.A. Thum. 2012. Hybrid watermilfoil lineages are more invasive and less sensitive to a commonly used herbicide than their exotic parent (Eurasian watermilfoil). *Evolutionary Applications.* 6(3):462-471.
- Poovey, A.G., J.G. Slade, and M.D. Netherland. 2007. Susceptibility of Eurasian Watermilfoil (*Myriophyllum spicatum*) and a Milfoil Hybrid (*M. spicatum* x *M. sibiricum*) to Triclopyr and 2,4-D Amine. *J. Aquat. Plant Manage.* 45: 111-115.






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Sources:
 Roads and Hydro: WDNR
 Orthophotography: NAIP, 2008
 Map Date: July 11, 2010



Project Location in Wisconsin

Legend

-  Little Bearskin Lake ~ 184 acres
WDNR Definition
-  Point-Intercept Survey Location
42-meter spacing, 421 total points
-  Public Access

Map 1
Little Bearskin Lake
 Oneida County, Wisconsin
**Project Location
 & Lake Boundary**

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	35	

Section II: Applicant Information

Applicant			Type of Eligible Lake or River Applicants			
Little Bearskin Lake Association, Inc..			<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
Little Bearskin 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/T37N/R06E/S12						
Authorized Representative Named by Resolution			Project Contact Name			
Richard Raymaker			Tim Hoyman			
Authorized Representative Title			Project Contact Title			
President			Aquatic Ecologist; Onterra, LLC			
Address			Address			
W331 N5467 Linden Circle East.			815 Prosper Road			
City	State	ZIP Code	City	State	ZIP Code	
Nashotah	WI	53058	De Pere	WI	54115	
Daytime Phone (area code)		Evening Phone (area code)		Daytime Phone (area code)		
(262) 367-8048				920.338.8860		
E-Mail Address			E-Mail Address			
richardraymaker@yahoo.com			thoyman@onterra-eco.com			
Mail Check to: (if different from applicant)			Address			
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 Little Bearskin Lake Hybrid Water Milfoil Monitoring & Control Strategy Development 2014-2015	Proposed Ending Date June 30, 2016
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Other Management Units	Letter of Support	Other Management Units	Letter of Support
1. Oneida County	<input checked="" type="checkbox"/>	4.	<input type="checkbox"/>
2. Town of Cassian	<input checked="" type="checkbox"/>	5.	<input type="checkbox"/>
3.	<input type="checkbox"/>	6.	<input type="checkbox"/>

Section IV: Public Access

Number of Public Vehicle Trailer Parking Spaces Available at Public Access Sites 8

Number of Public Access Sites Including Boat Launches and Walk-ins 1 boat landing

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	\$8,460.00		
3. Purchased services: Herbicide Applications	\$2,770.00		
4. Other purchased services (specify) : WDNR Permit Fees			
5. Plant material: Includes installation –			
6. Supplies (specify):	\$300.00		
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		\$1,800.00	
12. Subtotals (Sum each column)	\$11,530.00	\$1,800.00	
13. Total Project Cost Estimate (sum of column 1 plus sum of column 2)	\$13,330.00		
14. State Share Requested (up to 75% of total costs may be requested)	\$9,997.50		

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

Richard Raymaker

Signature of Authorized Representative

Title of Authorized Representative

President

Date Signed