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### Section I: Application Type

☐ **Lake Management Planning Grant**

Check one:

☐ Large-scale planning grant

☐ Small-scale planning grant

Check one:

☐ Lake education

☐ Organizational development

☐ Other study or assessment, or multiple-purpose project

☐ **Lake Management Protection Grant**

Check one:

☐ Wetland restoration

☐ Ordinance development

☐ Lake improvement

☐ Lake classification

☐ Land or easement acquisition

Legislative District Numbers		To determine your legislative district, go to <a href="http://165.189.139.210/WAML/">http://165.189.139.210/WAML/</a> Type in complete address, next screen shows information.
Senate	Assembly	

### Section II: Applicant Information

Applicant			Type of Eligible Applicant		
Lake Name		Size in Acres	<input type="checkbox"/> County	<input type="checkbox"/> Tribe	<input type="checkbox"/> Other Governmental Unit
Project County/Township/Section/Range			<input type="checkbox"/> City	<input type="checkbox"/> Sanitary District	<input type="checkbox"/> Non Profit Conservation Organization
Authorized Representative Named by Resolution			<input type="checkbox"/> Village	<input type="checkbox"/> Lake District	<input type="checkbox"/> School Districts (Planning)
Authorized Representative Title			<input type="checkbox"/> Town	<input type="checkbox"/> Lake Association	
Address			Address		
City	State	ZIP Code	City	State	ZIP Code
Daytime Phone (area code)	Evening Phone (area code)		Daytime Phone (area code)	Evening Phone (area code)	
E-mail Address			E-Mail Address		

**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 (LC)	Lake 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
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

# Lake Management Grant Application

Form 8700-283 (R 11/07)

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## Section III: Project Information

Project Title	Proposed Ending Date
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Other Management Units Around Lake	Letter of Support	Other Management Units Around Lake	Letter of Support
1.	<input type="checkbox"/>	4.	<input type="checkbox"/>
2.	<input type="checkbox"/>	5.	<input type="checkbox"/>
3.	<input type="checkbox"/>	6.	<input type="checkbox"/>

## Section IV: Lake Access

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

Number of Public Access Sites on Lake Including Boat Launches and Walk-ins:

## Section V: Cost Estimate and Grant Request

<b>Section V must be completed or application will be returned. Details in support of Section V are welcome.</b>	Project Costs		
	Column 1 Cash Costs	Column 2 Donated Value	<i>DNR Use Only</i>
1. Salaries, wages and employee benefits			
2. Consulting services			
3. Purchased services--printing and mailing			
4. Other purchased services (specify):			
5. Plant material			
6. Supplies (specify)			
7. Depreciation on equipment			
8. Hourly equipment use charges			
9. State Lab of Hygiene (SLOH) Costs			
10. Non-SLOH Lab Costs			
11. Land or easement acquisition value			
12. Associated acquisition costs			
13. Other (specify)			
14. <b>Subtotals</b> (sum each column)			
15. <b>Total Project Cost Estimate</b> (sum of <b>column 1</b> plus sum of <b>column 2</b> )			
16. <b>State Share Requested</b> (up to 75% of total costs may be requested)			

Subject to the following maximum grant amounts:

- Large-scale lake planning projects--up to \$10, 000
- Small-scale lake planning projects--up to \$3,000
- Lake classification and regulation or ordinance development projects--up to \$50,000
- Lake protection projects (other than lake classification and regulation or ordinance development projects)--up to \$200,000

**Section VI: Attachments (check all that are included)**

**A. For all applicants:**

- ☐ 1. Authorizing resolution
- ☐ 2. Letters of support
- ☐ 3. Map of project location and boundaries
- ☐ 4. Lake map with public access sites identified (per Section IV of this application)
- ☐ 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 goals 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) or Non-profit Conservation Organizations (NCOs):**

- ☐ 1. For first time applicant LMOs only: A completed Form 8700-226 (Lake Association Organizational Application)
- ☐ 2. For first time applicant NCOs 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. For land or easement acquisition projects: Detailed description of your organization's land management experience
- ☐ 7. Brochures, newsletters, annual reports or other information about your organization

**C. Wetland Restoration Projects:**

- ☐ 1. Deed, easement, or land control agreement
- ☐ 2. Preliminary engineering plans
- ☐ 3. Water regulatory permits
- ☐ 4. Map of project location and boundaries

**D. Ordinance Development Projects:**

- ☐ 1. Inventory of applicable existing ordinances
- ☐ 2. Description of resources each jurisdiction allocates to enforcement
- ☐ 3. Preliminary surveys

**E. Lake Improvement Projects:**

- ☐ 1. Engineering and design plans
- ☐ 2. Water regulatory permits
- ☐ 3. Map of project location and boundaries

**Section VI: Attachments, continued****F. Land or easement acquisition projects:**

- ☐ 1. DNR Form 1800-1 (Environmental Hazards Assessment Form)
- ☐ 2. Legal description of the property
- ☐ 3. Project location boundary map
- ☐ 4. Property or easement appraisal (if not previously submitted to the Department)
- ☐ 5. If escrow closing, the title insurance commitment
- ☐ 6. Evidence of compliance with Uniform Relocation Act requirements, if applicable
- ☐ 7. Agricultural Impact Statement, if applicable
- ☐ 8. Status of acquisition negotiations, including expected time frame for closing
- ☐ 9. A land management plan
  - ☐ a. Full description of property and conditions
  - ☐ b. Description of current and proposed uses of property and adjoining properties
  - ☐ c. Management requirements for property
  - ☐ d. If roads, piers or grading are proposed, a topographic survey with feature locations, and design cross sections

**Section VII: Certification**

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

Print/Type Name of Authorized Representative

Robert Murphy

Title of Authorized Representative

Chairman

Signature of Authorized Representative

Date Signed

04/10/10

**Bone Lake Management District  
Board Resolution**

County of Polk, Wisconsin

WHEREAS Bone Lake is an important resource used by the public for recreation and enjoyment of natural beauty; and

WHEREAS the protection of critical watershed areas and reasonable lake use activities are paramount in the protection of water quality and the natural ecosystem of the lake; and

WHEREAS we are qualified to carry out the responsibilities of this protection project.

IT IS THEREFORE, RESOLVED THAT:

The Bone Lake Management District requests the funds and assistance available from the Wisconsin Department of Natural Resources under the "Lake Management Protection Grant Program" and

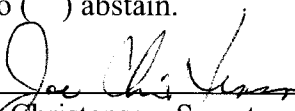
HEREBY AUTHORIZES, the Lake District Chair, to act on behalf of the Bone Lake Management District to: submit an application to the State of Wisconsin for financial aid for lake protection purposes; sign documents; and take necessary action to undertake, direct, and complete an approved protection project.

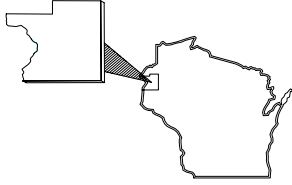
BE IT FURTHER RESOLVED that the Bone Lake Management District will comply with state rules for the program, may perform force account work, and will meet the financial obligations under the grant.

Adopted this 10th day of April 2010

By a vote of (5) in favor, zero (0) against, zero ( ) abstain.

By:

  
\_\_\_\_\_  
Joe Christensen, Secretary  
Bone Lake Management District



## **POLK COUNTY LAND & WATER RESOURCES DEPARTMENT**

**100 POLK COUNTY PLAZA – SUITE 120 BALSAM LAKE, WISCONSIN 54810**

**PHONE: 715-485-8699**

**FAX: 715-485-8601**

**TIM RITTEN, DIRECTOR: 715-485-8631**

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April 27, 2010

Ms. Pamela Toshner  
WDNR  
810 W. Maple St.  
Spooner, WI 54801

Subject: Bone Lake Protection Grant Application

Dear Ms. Toshner,

I am writing this letter to support the Bone Lake Protection Grant application. The Polk County Land and Water Resources Department has worked closely with the Bone Lake Management District, as well as their many subcommittees and volunteers on a variety of lake issues and projects.

The current grant application includes a cooperative effort by many entities, including the Polk County LWRD. We will provide assistance to the Lake District crop fields committee to help identify any areas of concern regarding crop fields, as well as assist with woody debris installation, recommendations for waterfront practices, identification of appropriate lands for protection, and with mapping assistance.

It is with pleasure that the Polk County LWRD writes this letter of support for the Bone Lake Protection Grant application.

Sincerely,

Tim Ritten, Director

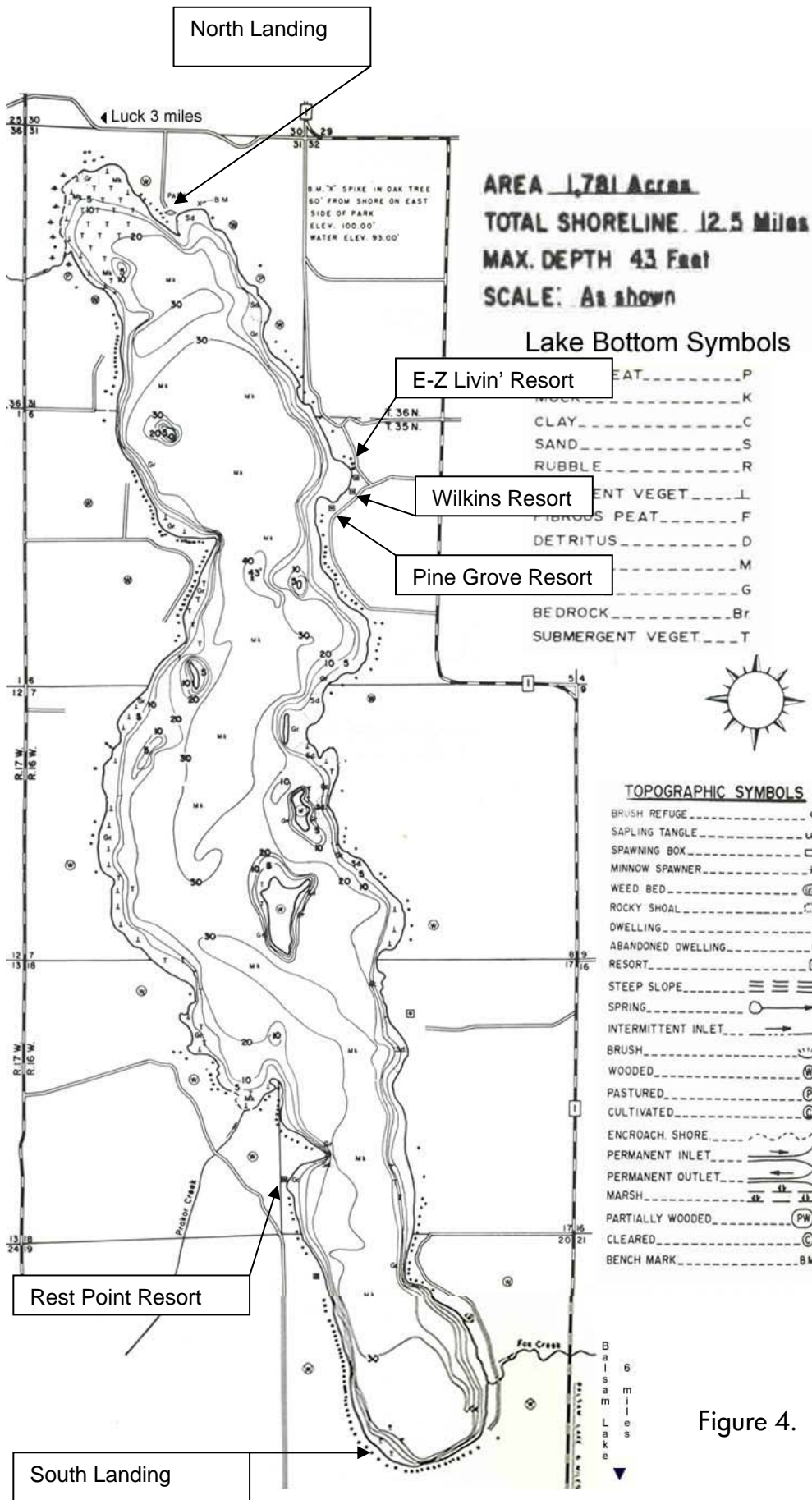


Figure 4. Bone Lake Map





## Public Boat Access Sites Bone Lake



### Legend

#### Verified Boat Access Sites

- RAMP
- CARRY-IN
- UNKNOWN

#### Un-Verified Boat Access Sites

- Not Verified

- Local Roads
- Rivers and Streams
- County Boundary
- 24K Open Water

#### Municipalities

- Village
- City

#### DNR Managed Lands

- Fee
- Easement
- Lease

0 5500 11000 16500 ft.



Scale: 1:58,840

This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.



	Vol Hours	Value	Consulting	Print/Mail	Purchased	Plants	Supplies	
<b>WATER QUALITY</b>								
Crop Fields	130	\$ 1,560						
WF Runoff	1066	\$ 12,792	\$ 42,000	\$ 3,150	\$ 81,500			
Eval/Studies	40	\$ 480						
<b>WILDLIFE</b>								
Land Protect.	80	\$ 960						
Wildlife Obj1	410	\$ 4,920.00		\$ 3,700	\$ 4,100		\$ 1,500	
Wildlife Obj 2-4	190	\$ 2,280.00		\$ 9,150				
Wildlife Obj 5+	390	\$ 4,680.00		\$ 2,600	\$ 300		\$ 600	
<b>NATURAL BEAUTY</b>	180	\$ 2,160.00		\$ 2,500				
<b>FISHERIES</b>	1155	\$ 13,860.00			\$ 17,760			
<b>COMMUNICATION</b>	2173	\$ 26,076.00		\$ 19,800				
<b>COORDINATION</b>			\$ 15,000					
		\$ 69,768.00	\$ 57,000	\$ 40,900	\$ 103,660		\$ 2,100	\$ 273,428.00
<b>volunteer miles</b>	?	\$ 0.50		<b>grant cash eligible</b>		\$ 203,660		

# **Bone Lake Comprehensive Lake Management Plan**

## **Lake Protection Grant Application**

**May 1, 2010**

### **Project Scope/Description**

#### ***a. Project area***

Bone Lake and its watersheds are located in the Town of Georgetown (T35N, R16W, S5, 6, 7, 8, 17, 18, and 20) and the Town of Bone Lake (T36N, R16W, S31); WBIC: 2628100 in Polk County, Wisconsin. It is a drainage lake with Prokop Creek and three mostly intermittent streams flowing into the lake and Fox Creek flowing from the lake. Fox Creek eventually flows to the Apple River. The maximum depth is 43 feet, and the mean depth is almost 22 feet.

The Bone Lake watershed is part of the Upper Apple River watershed in the St. Croix River Basin. The watershed (or drainage area) of Bone Lake is approximately 9,173 acres. Of this area, approximately 3,088 acres are landlocked and do not contribute surface flow to the lake. Therefore, the area that drains directly to Bone Lake is about 6,085 acres.

The enclosed map shows public boat landing locations along with additional private access points.

#### **Rare and Endangered Species Habitat**

Bone Lake is in the Town of Georgetown (T35N, R16W) and the Town of Bone Lake (T36N, R16W). DNR records show two special concern species in and around Bone Lake. However, records of species present are no longer available to the public, so they are not listed in this grant application. Instead species for the two townships where Bone Lake is located are listed on the following page. No state or federally listed threatened, endangered, rare, or special concern plant species were found in any lake plant surveys.

<b>Scientific Name</b>	<b>Common Name</b>	<b>State Status<sup>1</sup></b>	<b>T35N R16W</b>	<b>T36N R16</b>
<i>HALIAEETUS LEUCOCEPHALUS</i>	BALD EAGLE	SC/FL	YES	YES
<i>PANDION HALIAETUS</i>	OSPREY	THR		YES
<i>WILSONIA CANADENSIS</i>	CANADA WARBLER	SC/M		YES
<i>DENDROICA CAERULESCENS</i>	BLACK-THROATED BLUE WARBLER	SC/M		YES
<i>COCCYZUS AMERICNUS</i>	YELLOW-BILLED CUCKOO	SC/M		YES
<i>DENDROICA CERULEA</i>	CERULEAN WARBLER	THR		YES
<i>CYGNUS BUCCINATOR</i>	TRUMPETER SWAM	END		YES
<i>OPHIOGOMPHUS SMITHI</i>	SAND SNAKETAIL	SC/N		YES
<i>FUNDULUS DIAPHANUS</i>	BANDED KILLIFISH	SC/N	YES	YES
<i>HEMIDACTYLUM SCUTATUM</i>	FOUR-TOED SALAMANDER	SC/H		YES
<i>ELEOCHARIS ROBBINSII</i>	ROBBINS SPIKERUSH	SC		YES

The following communities are also listed in the database for T35N R16W:

*Northern dry-mesic forest*  
*Northern wet-mesic forest*

The following communities are also listed in the database for T36N R16:

*Open bog*  
*Northern wet forest*  
*Northern dry-mesic forest*  
*Northern wet-mesic forest*  
*Lake – soft bog*  
*Ephemeral pond*  
*Southern dry-mesic forest*  
*Tamarack (poor) swamp*

***Note that wildlife goal objective 5 specifically targets improving habitat for sensitive species by focusing on increasing understanding of the importance of vernal pools.***

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<sup>1</sup> THR = Threatened, END = endangered, SC/FL = Special Concern (federally protected as endangered or threatened), SC/N = Special Concern (no laws regulating use, possessions, or harvesting), and SC/H = Special Concern (take regulated by establishment of open closed seasons).

## ***b. Problem to be addressed by project***

The Bone Lake Management District commissioned an advisory committee with 15 members and 4 advisors to assist in the development of the Bone Comprehensive Lake Management Plan in 2008 – 2009. The committee met 5 times to develop the plan. The plan has been approved by Lake District Board and the Department of Natural Resources. The approval letter is included with the grant application.

**This lake plan implementation project addresses the priority concerns or problems identified in the planning process.**

**Identified concerns include:**

- **Water Quality** (*Water quality concerns are related primarily to periodic algae blooms, some of which are severe. A major challenge of implementing the lake management plan is that only 19% of lake residents felt that runoff from their property impacted lake water quality. Percentages were low even with committee members of which only 40% thought runoff from their lot contributed to water quality problems in Bone Lake.*)
- **Natural Scenery** (*The committee “natural beauty” definition includes wildlife, plants, trees, clear water, quiet solitude, a variety of scenery, views of the lake. Where development occurs, it is preferable to have minimal views of buildings.*)
- **Fish Management** (*Initial concerns were related to high levels of tribal harvest of musky. The fishery committee has since expanded into looking into ways to improve fish habitat in the lake.*)

## **Water Quality Model Results<sup>2</sup>**

The water quality model can be used to predict the impacts of changes in land management. The 2008 in-lake total phosphorus growing season average was 38 ppm which is consistent with model predictions. A tentative goal is to reach 30 micrograms per liter (equivalent to 30 parts per billion or 30 ppb). With overall watershed phosphorus reduction of 20%, a result of 31.5 ppb is predicted. With overall watershed reduction of 30%, 29.5 ppb is predicted.

Additional predictions from the water quality model are described in the bulleted list below.

- Reducing 70 acres of crop field P loading by 80% predicts 37 ppb, a 2.6% reduction in summer in-lake total phosphorus.

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<sup>2</sup> Information from Steve Schieffer, Ecological Integrity Services.

- Reducing 25% of residential P loading by 50% predicts 36 ppb, a 5.2% reduction in summer in-lake total phosphorus.
- A combination of the two predicts 34 ppb, an 11% reduction in summer in-lake total phosphorus which is half way to the water quality in lake phosphorus concentration goal. **This is where project water quality improvement efforts are focused.**
- Additional phosphorus reduction could come from management actions on the tributaries – especially on the northwest tributary where actual phosphorus loading was higher than predicted or from curly leaf pondweed management. Both of these are under study in current lake management planning grant projects.

### **Shoreland Habitat Assessment Results**

Volunteers completed a shoreland habitat assessment as part of the lake management plan. The assessment measured shoreline composition (at the immediate water's edge) and shoreland buffer composition (within 35 feet of the ordinary high water mark). The shoreline composition was 51% natural vegetation. The shoreland buffer composition was 34% natural. These percentages will be assessed again following completion of the lake protection grant to see how the project activities have influenced these amounts.

### ***c. Project goals and objectives***

Project goals and objectives are taken from the *Bone Lake Comprehensive Lake Management Plan, August 2009*. Some have been modified a bit after careful study by implementation committees.

### **Goal. Improve Bone Lake water clarity.**

#### **Objectives**

Achieve an in-lake average summer phosphorus concentration of 30 ppb or less.

Reduce watershed phosphorus (P) loading by 25% or more.

- Reduce P loading from urban sources by lowering runoff from 25% of residential lots by 50%.
- Reduce P loading from cropland sources by reducing loading from 50 acres of row crop by 80%.
- Reduce tributary loading of phosphorus by 25%.

**Goal. Protect and improve wildlife habitat in the Bone Lake shoreland area.**

**Goal. Maintain and enhance Bone Lake's natural beauty.**

**Create learning opportunities for children, adults, and families, delivered using a variety of methods: lectures, workshops, contests, family activities, handouts, brochures, newsletter articles, website features.**

**Wildlife Objectives:**

1. Engage property owners in observing wildlife and recording their encounters.
2. Increase residents' understanding of ways to attract wildlife to their property.
3. Preserve and protect native wildlife habitat in public and private land around Bone Lake.
4. Provide information, education and support to understand the importance of native plants in the shoreland landscape with best practices for adding native plants that support wildlife; reduce the areas of lawn.
5. Provide information, education and support to understand the importance of and identify the habitat for threatened and endangered species.

**Scenic Beauty Objectives:**

1. Maintain undeveloped natural areas.
2. Enhance natural beauty of developed areas.
3. Preserve and enhance the opportunity to observe the beauty of the night sky.

**Goal. Protect and improve the Bone Lake fishery.**

**Objectives**

Maintain desirable levels of game fish in Bone Lake.

Assess and improve fish habitat.



## ***Bone Lake Protection Grant 2010***

### ***d. Methods and activities***

#### **Committees for plan implementation**

A unique feature of implementation of the Bone Lake Management Plan is the high level of involvement by lake volunteers. There are currently 6 committees organized to support implementation of various activities in the plan. These committees have from 4 to 7 volunteers each. Committees have met regularly to develop the details of plan implementation included in this grant application. Committees have collectively contributed over 275 hours toward the development of the projects in this grant application. Board members volunteered at least 30 additional hours to oversee the committee work.

The committees will continue to assist with plan implementation through the duration of the lake protection grant project. The committees will receive advisory support from local and state agencies and/or private consultants. The management district board approved reimbursement of mileage at the federal rate for lake district volunteers.

**Committee job descriptions are as described below.**

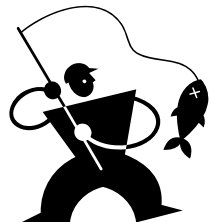


#### Crop Fields Committee (haven't met yet)

The Crop Fields Committee will help to assess and reduce the amount of runoff that makes its way from agricultural fields into Bone Lake. The Polk County Land and Water Resources Department is helping with this effort.

#### Waterfront Runoff Committee (approx. 80 hours so far)

The Waterfront Runoff Committee is developing a program to provide lakeshore property owners with the educational materials, technical assistance, financial incentives, and encouragement necessary to reduce runoff from their property. This committee is emphasizing innovative marketing techniques used in a step-by-step manner to encourage program participation.



#### Fisheries Committee (101 hours so far)

The Fisheries Committee will provide input to the DNR and the Tribe to help protect and improve the Bone Lake fishery. They are also working on installation of wood habitat structures for fish – especially in sensitive areas of the lake.

#### Evaluation and Studies Committee (48 hours so far)

The Evaluation and Studies Committee is monitoring the inputs to Bone Lake from its tributaries and other non-point sources within the watershed. Consultant help is available to guide testing and studies. Their work is largely supported through planning grant projects.



#### Wildlife and Natural Beauty Committee (44 hours so far)

The Wildlife and Natural Beauty Committee will provide information to lake residents to encourage maintaining undeveloped natural areas and enhancing the natural beauty of developed areas around Bone Lake.

#### Communications Committee (many hours donated)

The Communications Committee will facilitate lake resident education through the distribution of materials and information. The communications committee manages the Bone Lake web site and newsletter.



### **Actions**

*The actions were initially described in the lake management plan. They have been further developed by the implementation committees.*

### **Water Quality**

#### Crop Fields

- ✓ Investigate options for reducing nutrient loading once runoff testing results from planning grant project are available.
- ✓ Open dialogue with landowners with the assistance of Polk County LWRD.
- ✓ Encourage implementation of practices that reduce runoff and erosion from cropland.

These projects are not included in the current grant application because the priority sites have not been identified and project specifics have not been developed.

## Waterfront Runoff Actions

- ✓ Provide on-site technical assistance to property owners to encourage implementation of practices that reduce runoff from waterfront property.  
*Technical assistance must be no-strings attached and non-regulatory.*
- ✓ Implement the innovative marketing strategy developed by the Waterfront Runoff Committee. The strategy emphasizes a step-wise approach to first convince landowners that their property might be contributing to pollutant loading, then obtain an invitation to conduct an initial site analysis. The objective of the site visits is to be invited back to provide more detailed designs that will ultimately result in installation of water quality practices. The marketing strategy is included as an attachment.

### Benchmark objectives:

Post cards distributed (500 in wave mailings)

Checklists distributed (250 in response to wave mailings)

Quick assessment visits completed (100 total visits)

Initial simple project installations (30 diversions, rain barrels, small native plantings, etc.)

Detailed designs completed (50 total designs)

Projects installed (25 total installations)

- ✓ Provide financial incentives (cost-sharing) to encourage installation of waterfront runoff practices.

Projects will be cost shared with the Lake District providing 70% of project costs through the grant and the homeowner providing 30% of project costs.

### Benchmarks:

Water quality practices installed (25 total installations)

- ✓ Complete engineering design and permitting and install medium scale projects that involve runoff from more than one property (generally a drainage area 2 acres or greater)

*Land and Water Resource staff (Dave Peterson, Jeremy Williamson, and Scott Geddes) have already visited 2 sites where the drainage area is greater than 2 acres. Staff have made recommendations for practices and provided preliminary cost estimates for these sites. Support for engineering design, construction oversight, and installation costs are included in the grant budget.*

## **Greg Lindquist property**

1154 240<sup>th</sup> Avenue (NW side of the lake)

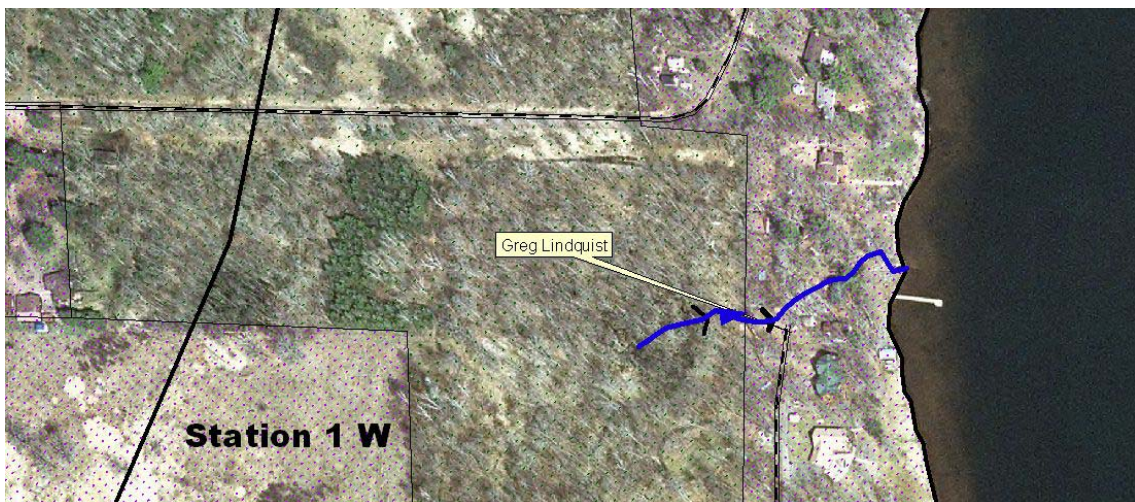
### Problem #1

This property has concentrated flow which runs from roofs and other impervious surfaces above, down the road directly to the lake. This flow washes out gravel with stones as large as one inch.

### Proposed solution

Capture water above with waterfront runoff practices.

Divert remaining water across the road to low area. This diversion will need to be stabilized with pavement or heavier rock.



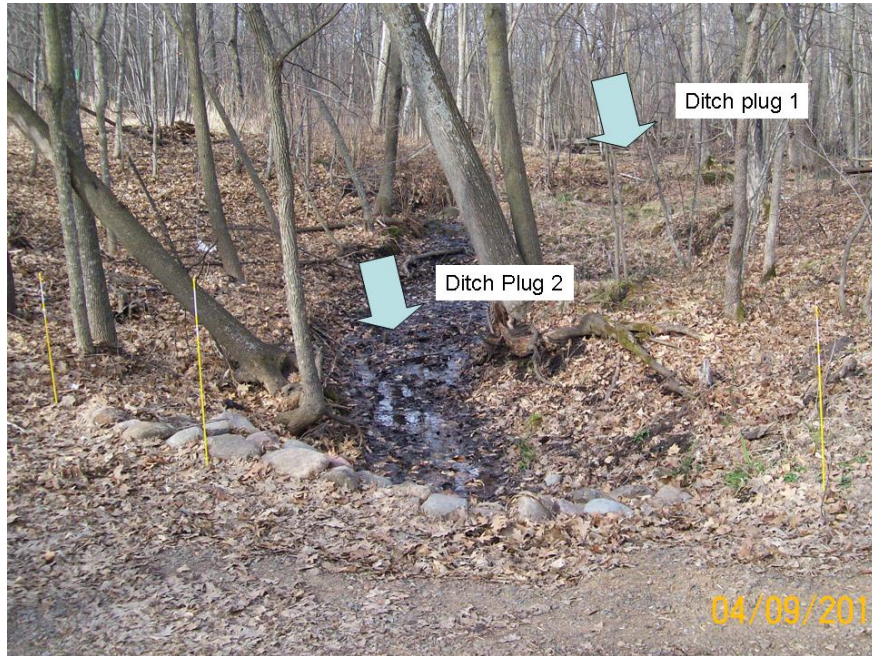
Divert water across driveway

### Problem #2

Water drains from a wet area, through a culvert under the road, then directly to the lake.

### Proposed solution

Construct a series of ditch plugs to hold water and allow it to settle. The Lake District and owner will obtain necessary permits and permission prior to implementing the project.



Cost for design and permitting: \$2,000

Cost for installation: \$6,000



**Cris Moore and nearby property**

1164 250<sup>th</sup> Ave. (Lagoon on north side of the lake)

*We are monitoring sediment and nutrient content of the water and estimating flow through culverts 5, 6, and 7 as part of the 2010 planning grant project.*

This property is at the lake entrance of Station 1 NW watershed. The watershed is composed of mainly forest and grassland. All water flowing from this watershed crosses 250<sup>th</sup> Ave. at culvert # 5, a 30" culvert. Water then flows to the lagoon on the north end. Because of the high flow and large culvert size, the best solution for this area will be to clear the brush vegetation from the channel to allow tall grasses to slow water and allow sediments to settle.



***Water flows across Moore property.***

*Note that solutions for these two medium scale projects may be modified as land survey and designs are developed.*



### Culvert # 7

Sediment has collected partially plugged Culvert #7 (see watershed diagram on next page and picture below). Surface water is flowing from the Hunting Grounds subwatershed crossing County Highway GG through a 34" culvert. Water then flows toward 250<sup>th</sup> in a well defined channel with little area to develop a sediment basin. As the water reaches the culvert #7, a 20" culvert, the water backs up because of the smaller diameter, dropping out sediment. As the water level increases, it flows to culvert # 6. Flow below the culvert is partially through the wetland area and to the lake.

Solution: Culverts should be sized to adequately handle the flow. Dredging the entrance to these culverts will help to allow a place for sediment to settle. A stilling basin should be in place below these culverts to limit erosion from the culvert invert.

Cost for survey, engineering, and observation of installation: \$5,000

Practice construction: \$20,000

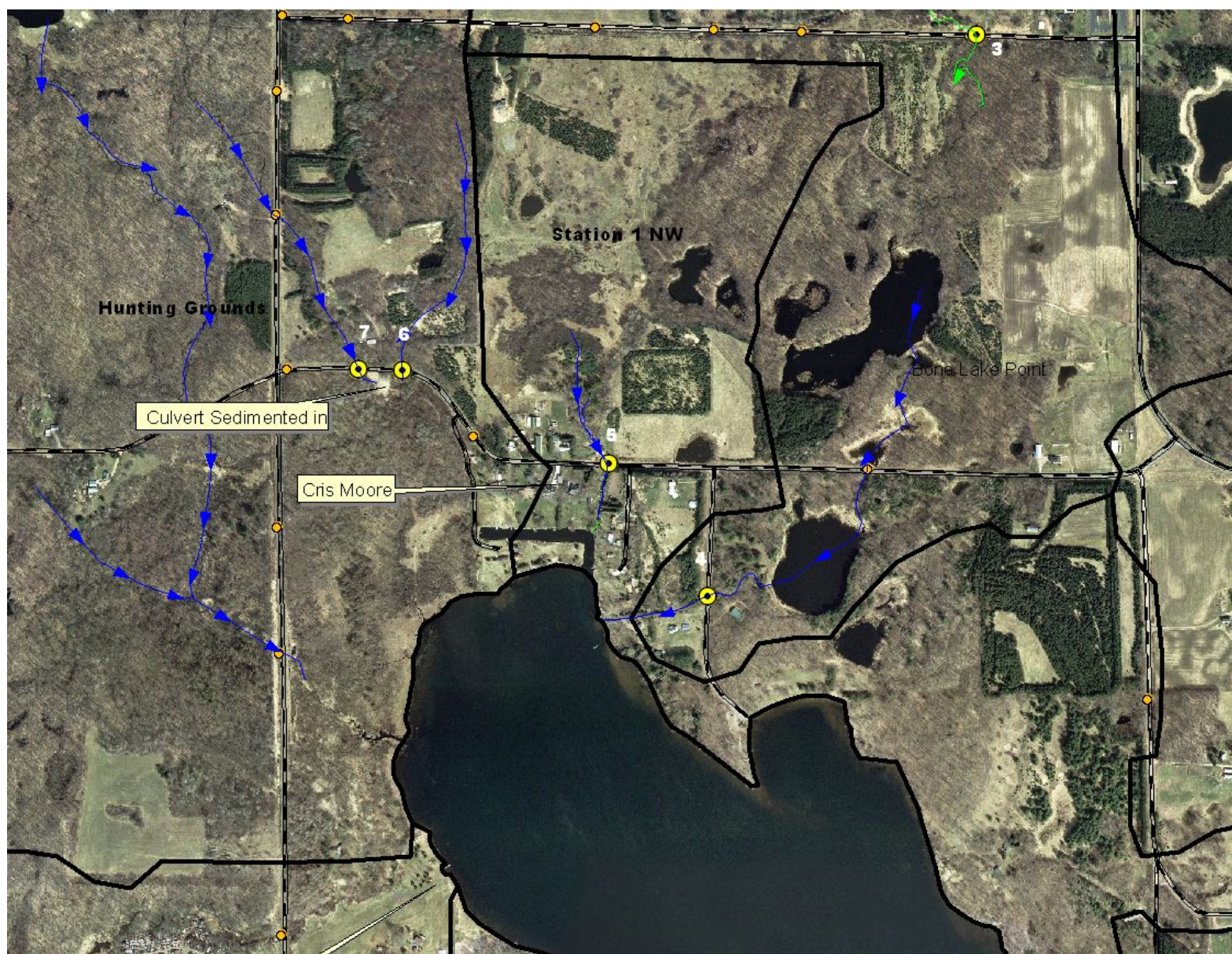


*Culvert #7 w/sediment deposition is improperly sized.*



*Eroded channel flows to the lake.*





*Aerial photo of Cris Moore property area*

## Selected Volunteer Participants

Several landowners have already volunteered for quick assessment site visits. These 23 properties put us well on our way toward our goal of 25 site assessments for 2010.

Owner(s)	Lake Address	Potential practice (s)	Shore length (ft.)	Area of Lake	Sensitive Area?
Charles Adleman	2455 110 <sup>th</sup> Street	Wood habitat	1200	NE	NO
Dick Boss	2102 West Bone Lake Drive	Unsure	100	SW	NO
Bob and Lorraine Boyd	2048 Dueholm Drive	All	100	SW	NO
Alex & Mary Chorewycz	2086A West Bone Lake Drive	Unsure	90	SW	NO
Lyn and Cris Dueholm	2017 Island View Lane	Unsure	100	S	NO
Department of Natural Resources	Small Island	Wood habitat		E	YES-D
Karen Engelbretson	1054A 230 <sup>th</sup> Avenue	Water diversions	326	E	YES-C
Phil and Sue Foster	2080C W Bone Lake Drive	Rain garden, diversions, rain barrel, aquatic plantings, shoreline buffer zone	108	SW	NO
Jack Lachenmayer	2042 Dueholm Drive	Rain barrel	100	SW	NO
Ron & Mary Lachenmayer	2040 Dueholm Drive	Aquatic plantings	100	SW	NO
Kirk and Beth Larson	2180 W. Bone Lake Court	Wood habitat	438	W	YES-H
Wayne Liepke	2118 W. Bone Lake Drive		190	SW	NO
Michael & Lorraine Lunzer	2186 W. Bone Lake Court	Unsure	100	W	NO
Russ and Ann Miller	2036 Dueholm Drive	Unsure	101	SW	NO
Cris Moore	1164 250 <sup>th</sup> Ave.	Infiltration pit or trench, diversions, rain barrel	125	N	NO
Dave Nelson	2247 Sunnyside Lane	Diversions, aquatic plantings, others?	100	E	NO
Brian and Sharon Paulsen	2104 W. Bone Lake Drive	Unsure	100	SW	NO
Carla Randall	2007 Island View Lane	Unsure	89	S	NO
Patrick and Dolly Schmidt	2192 Bone Lake Ct. W	Unsure	101	W	NO
John & Sharon Spies	2176 116 <sup>th</sup> Street	Water diversions, wood habitat	300	W	YES-H
Chuck and Lois Steege	224 117 <sup>th</sup> Street	Unsure	113	W	YES-I
William Trost	2063 Beddor Ct.	Aquatic plantings, shoreline buffer zone	150	SE	YES-G
Wayne and Mary Lou Wolsey	2215 Sunnyside Lane	Shoreline Buffer Zone	100	SE	YES-F



## Example Sensitive Area Site Photos



*Engelbretson property – adjacent to Sensitive Area C – Water Diversions*



*Larson property – adjacent to Sensitive Area H – Wood Habitat*



*Spies property – adjacent to Sensitive Area H – Water Diversions and Wood Habitat*



*Steege property – adjacent to Sensitive Area I*





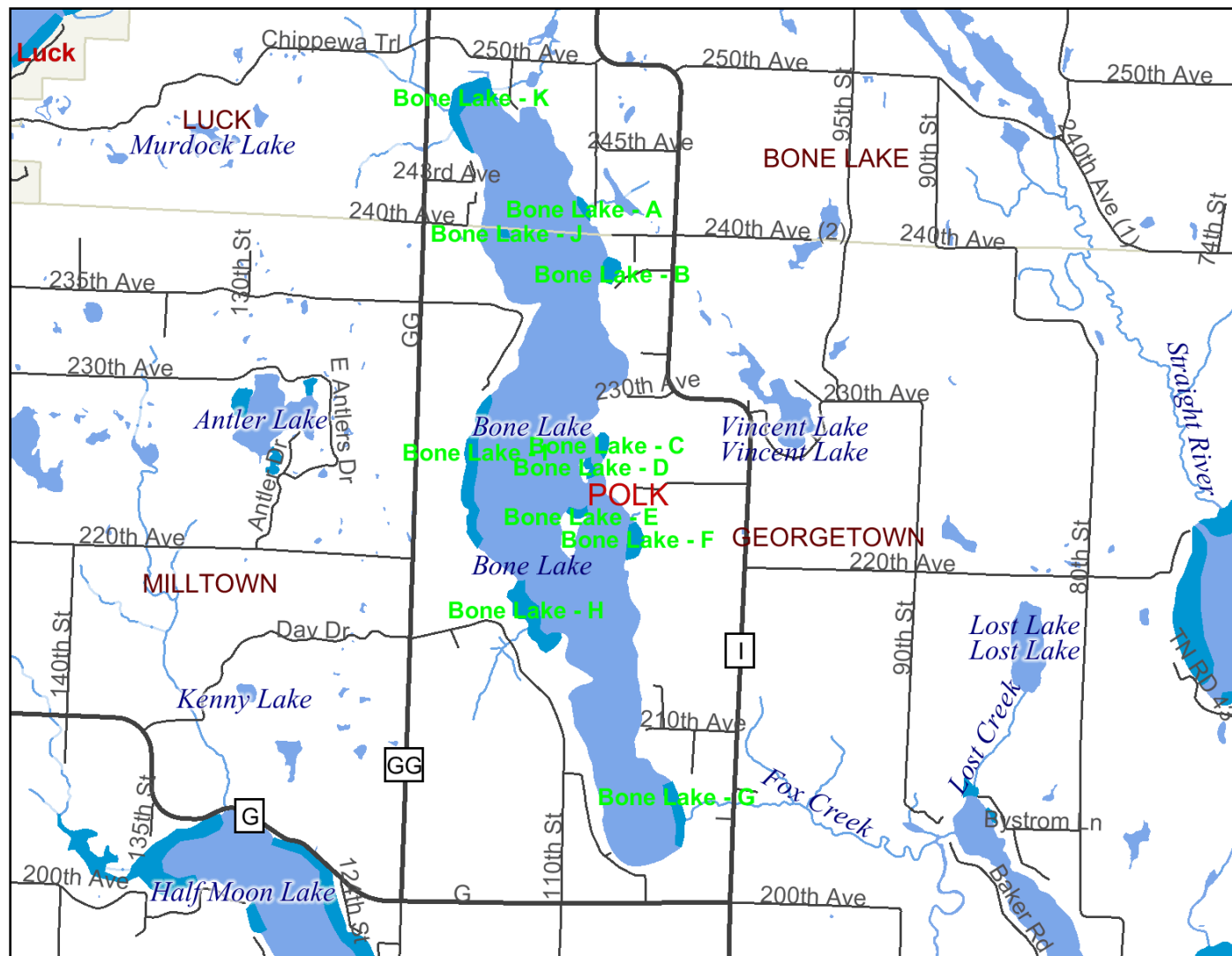
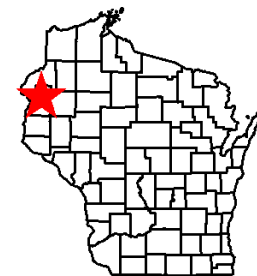
*Trost property – adjacent to Sensitive Area G – Aquatic Plantings, Shoreline Buffer Zone*



*Wolsey property – adjacent to Sensitive Area F – Shoreline Buffer Zone*



# Bone Lake Sensitive Areas



## Legend

### Major Highways

- Interstate
- State Highway
- U.S. Highways
- County Roads
- Local Roads
- 24K County Boundaries
- Civil Towns**
- Civil Town
- Critical Habitat Areas**
- Sensitive Area Designation
- Other Public Rights Feature
- Open Water Details
- 24K Open Water
- 24K Rivers and Shorelines
- Intermittent
- Fluctuating
- Perennial
- Cities and Villages**
- Village
- City

0 6000 12000 18000 ft.



Scale: 1:62,669

This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

## Wildlife Actions

*Note – a more detailed description of Wildlife and Scenic Beauty Actions is available upon request*

### Objective 1:

**Engage property owners in observing wildlife and recording their encounters.**

### Action Items

Prepare a *plant and animal inventory form* for lakeshore residents to use to record their encounters and observations of Bone Lake wildlife, native species, and special natural habitat.

*Map natural areas along shoreline* and document whether they are public or privately held; include habitat types, plants, animals sighted. Use resources from the lake management plan and plant inventories conducted by consultants and volunteers, plus data from residents who are currently observing wildlife. Build on this map when collecting data from residents' observations as a record of Bone Lake wildlife populations.

*Distribute DNR Wildlife Cards* to residents to aid in plant and animal identification.

Update *WLSB committee page on website* with findings.

Develop a *Nature Blog page* on existing website for uploading stories and images of nature encounters (page to be monitored by committee member).

*Nature journal workshop* for families, children, and adults. Make a nature journal and learn how to record observations, steps to scientific process, drawing and sketching in nature.

*Distribute* a variety of *nesting boxes* or kits to residents willing to install, observe, record, and report the nesting activity from the box.

*Host guest speaker.* Naturalist with live animals, birds, or taxidermy to speak at Lake Fair or other meeting. Programming will be suitable for children and families.

*Host guest speaker for photography workshop.* How to get good wildlife photos. Photo contest.

## **Objective 2**

**Increase residents' understanding of ways to attract wildlife to their property.**

**Behavior: Preserve existing and add wildlife habitat to lakeshore property.**

Create and print a *brochure* listing common wildlife habitat requirements and simple ways for lakeshore property owners to increase habitat at their property. Address vernal pools and ephemeral wetlands. Collaborate with waterfront runoff committee. Pair this brochure with resident-updated Bone Lake plant and animal inventory list and website. Offer no-obligation site visit.

## **Objective 3**

**Preserve wildlife habitat in public and private land around Bone Lake.**

**Behavior: Protect and preserve near shore aquatic plant communities.**

*Mapping wildlife.* Create a large-scale printed map to use in lake cabin to record sightings of wildlife with dates, locations, and description. Pair with nature journal projects.

*What's in the lake.* Develop an *interactive print and screen game* matching sensations felt while wading in the lake with the associated animal/vegetable/mineral.

## **Objective 4:**

**Provide information, education and support to understand the value of native plants in the lakeshore landscape; how to create beautiful and ordered low-maintenance gardens with native plants; the threats of invasive plants in the lakeshore landscape.**

**Behavior: Choose native plants for landscaping over horticultural varieties, reduce the amount of area of your lawn.**

*Guest speaker and/or newsletter article.*

*Cartoon series:* What would I do if I didn't have a lawn (compare the expense of time and dollars maintaining a lawn with the leisure time recovered when you don't have one, or don't have such a big one).

**Objective 5: Provide information, education and support to understand the importance of and identify the habitat for threatened and endangered species.**

*The endangered species in Polk County and how to identify them.* Information about situation, habitat requirements. *Checklist* for identifying habitat for endangered species, images for identification, and how to document a sighting. *How to create habitat for specific species.*

*Distribute vernal ponds brochure.* Acquire from DNR or re-create and print. Distribute with newsletter and at meetings. Post as download on website.

## **For all objectives**

*Display board*

*Description of committee's activities, findings, and photos. Handouts and current contests.*

*Resources for more information.*

*List other nature activities in the area.*

## **Scenic Beauty Actions**

### **Objective 1**

#### **Maintain undeveloped natural areas**

Overlaps with Wildlife Objective 1

### **Objective 2**

#### **Enhance natural beauty of developed areas**

Information and education delivered via newsletter, and website.

Overlaps with Wildlife Objective 4

### **Objective 3**

#### **Preserve and enhance the opportunity to observe the beauty of the night sky.**

Inform lakeshore residents of the issue and introduce simple methods to *reduce glare from lighting in the shoreland area*: shielded lights, low wattage lighting. Include information on outdated or even illegal lighting, associate with energy costs. Shielded lighting directs light to where it's needed – to the ground, not into the sky.

Provide resources for understanding the issue [www.darksky.org](http://www.darksky.org), brochures on lighting and discussing the issue with your neighbors.

Provide star charts to lake residents.

## **Fisheries Activities**

- ✓ Encourage, communicate, and support DNR and Tribal assessment and management of fish populations.
- ✓ Install wood habitat to provide structure for fish and other aquatic species.
- ✓ Install half logs to provide structure for fish and other aquatic species.

Riparian owners must provide permission for installation and sign the necessary permits. Owners will not be charged for wood habitat installations or permits i.e., cost share rate is 100% from the Lake District. Committee volunteer hours provide the necessary grant match.

### Initial criteria for wood habitat installation:

Low energy locations: areas that may not get as much pressure from ice out in the spring or wave action from boaters

The size of the trees will be determined by the depth of the water. Shallow water = small trees, deep water = larger trees

Tree availability

### Criteria for half log installation:

Hard bottom: sand or rocks.

6 feet of water depth

Near wood habitat complex a bonus (then only one permit is needed)

Attachments provide an estimate of costs for these practices

## ***e. Project products or deliverables***

- Installed waterfront runoff practices.
- Waterfront postcard, checklist, and site evaluation form.
- Installed wood habitat and half log projects
- Wildlife habitat outreach materials and responses from owners
- Final report in pdf format

Additional outcomes and data collected listed in implementation chart.

## ***f. Data to be collected***

- Response to waterfront runoff postcard: number of evaluation checklists or site visits requested.
- Response to waterfront runoff checklist: number of site visits requested.
- Response to waterfront runoff site visits: installation of simple practices completed, detailed designs requested.
- Response to detailed designs: cost share project completed, installations completed without cost sharing.
- Wildlife/Natural Beauty: landowner participation in various educational activities

### ***g. Existing and proposed partnerships***

The Bone Lake Management District works closely with the Polk County Land and Water Resources Department (LWRD) to plan and implement lake management projects. The LWRD has already assisted with plan implementation by evaluating sites of potential runoff in a spring tour and providing practice recommendations, priority evaluation, and cost estimates for engineering and installation. They will provide assistance to the Lake District crop fields committee to help identify any areas of concern regarding crop fields, as well as assist with woody debris installation, recommendations for waterfront practices, identification of appropriate lands for protection, and mapping.

### ***h. Role of project in planning and/or management of lake***

Bone Lake developed an Aquatic Plant Management Plan in 2008 and a Comprehensive Lake Management Plan in 2009. These plans now guide Lake District activities. The Comprehensive Lake Management Plan set direction for lake management activities, but also raised several questions that will be addressed as part of current planning grant projects (through December 2011). The Comprehensive Plan also established a volunteer committee structure for plan implementation. These committees will continue to support plan implementation with a high degree of public involvement.

The project is consistent with the *Polk County Land and Water Resource Management Plan*. 2009. Some overlapping goals and activities directly from the plan are included below.

### **Goal 1. Protect the water quality of our groundwater, lakes, streams, rivers, creeks, and associated ecosystems.**

Objective 1B. Limit the amount of non-point phosphorus reaching our waterbodies to prevent degradation from agricultural land uses.

- Provide education on proper erosion control and nutrient management standards (ATCP 50) to agricultural producers
- Collaborate with state efforts to achieve the 20% reduction in total phosphorus loading to the St. Croix Basin
- Identify and work to improve areas needing specific water quality protection from agricultural runoff

Objective 1C. Limit amount of non point runoff from urban stormwater runoff to prevent anthropogenic eutrophication.

- Identify and work to improve areas needing specific water quality protection from urban stormwater runoff

### **Goal 2. Protect shorelines, undeveloped riparian land, wetlands and aquatic plant communities, grasslands, forests, upland plant communities, farmland, and agricultural resources to perpetuate the benefits they provide: habitat and associated native wildlife communities, clean water, clean air, carbon sequestration, aesthetic beauty, and recreational opportunities.**



**Goal 3. Support and develop the human resources in Polk County that manage our natural resources – both LWRD and volunteer management groups.**

Objective 3A. Educate public to instill an appreciation of natural resources.

- Expand natural resource education through innovative approaches and offer incentives whenever possible
- Continue to offer technical assistance to private landowners countywide

Objective 3B. Provide support for volunteers and residents who are properly managing natural resources by both technical and financial means whenever possible.

The Department of Natural Resources updated the *St. Croix Basin Plan* in 2002 for the Wisconsin portion of the watershed. Goals include maintaining and **improving water and air quality; maintaining diverse, rich shoreland habitat**; preserving large contiguous blocks of forestland, grassland, prairie, and wetlands; **working with the agricultural community to minimize nonpoint runoff**; working with cities, villages, towns and counties to help stem urban sprawl; and **providing education and technical assistance to enhance voluntary conservation.**

***i. Timetable for implementation***

See attached 2010- 2012 implementation chart.

***j. Plan for sharing project results***

Comprehensive Lake Management Plan and Aquatic Plant Management Plan are posted on the Bone Lake web site.

Bone Lake Management District web site, newsletter and annual meeting will include updates of plan activities and targeted outreach to residents.

Study reports and updates/addendum to Bone Lake Comprehensive Lake Management Plan will be shared.

***k. Other information not described above (attached)***

Waterfront runoff committee marketing plan

Fisheries committee cost estimates

DNR plan approval letter

Bone Lake Comprehensive Lake Management Plan (pdf format)

## Bone Lake Management Implementation Plan or Workplan 2010 -2012

<b>Goal. Improve Bone Lake water clarity.</b>							
<b>Action Items<sup>1</sup></b>	<b>Cost 2010 \$/Vol hours</b>	<b>Cost 2011 \$/Vol hours</b>	<b>Cost 2012 \$/Vol hours</b>	<b>Outcomes/ Data collected</b>	<b>Resources/ Partners</b>	<b>Funding Sources</b>	<b>Notes</b>
<b>Crop Fields</b>					<b>Agriculture Committee</b>		Not active until after monitoring results available.
Test runoff and identify significant crop fields	Sampling budget \$2,000 40 hours				Eval/studies committee LWRD Consultant	Small scale planning 8/01/09 – 12/31/2011	Sample collection underway Consultant to analyze test results
Investigate options for reducing nutrient loading		40 hours	<b>40 hours</b>	<b>Practices identified</b>	LWRD	<b>Lake protection grant 2010</b>	
Open dialog with landowners and encourage practice implementation		10 hours	<b>10 hours</b>	<b>Landowner interest</b>	LWRD	NRCS DATCP	
Consider purchasing portions of crop fields and supporting incentives to reduce crop runoff		<b>40 hours</b>	<b>40 hours</b> Purchase \$?	<b>Fields ID'd Incentives ID'd</b>	District Board	<b>Lake protection grant 2012</b>	Implementation budgets to be determined for subsequent funding requests
Dueholm Drive field – survey field ID management					LWRD	<b>Lake protection grant 2012</b>	
<b>Lake Protection Grant Subtotal</b>		<b>40 hours</b>	<b>90 hours</b>				

Action Items <sup>1</sup>	Cost 2010 \$/Vol hours	Cost 2011 \$/Vol hours	Cost 2012 \$/Vol hours	Outcomes/ Data collected	Resources/ Partners	Funding Sources	Notes
<b>Waterfront Runoff</b>					<b>Waterfront Runoff Committee</b>		
Committee Oversight and Involvement	<b>184 hours</b>	<b>192 hours</b>	<b>192 hours</b>	Meetings held		<b>Lake protect. grant 2010</b>	
Develop and implement marketing program	Materials \$2,000 100 hours	<b>Materials \$2,490 Postage \$330 74 hours</b>	<b>74 hours Postage \$330</b>		LWRD Consultant Com. Committee	<b>Lake protect. grant 2010</b>	Use educational materials from other sources where possible
On-site quick assessment visits	<b>\$3,125 90 hours</b>	<b>\$4,375 110 hours</b>	<b>\$5,000 120 hours</b>	100 total visits 30 easy installations	Consultant Homeowners	<b>Lake protect. grant 2010</b>	Consulting assistance @ \$125/visit
Design visits	<b>\$3,600 24 hours</b>	<b>\$5,400 36 hours</b>	<b>\$6,000 40 hours</b>	50 total designs	Consultant Homeowners	<b>Lake protect. grant 2010</b>	Consulting assistance @ \$300/visit
Cost sharing and design oversight	<b>\$1,800 12 hours</b>	<b>\$2,700 18 hours</b>	<b>\$3,000 20 hours</b>	25 total projects	District Board LWRD Consultant	<b>Lake protect. grant 2010</b>	Oversight @ \$300/property
Installation of water quality practices	<b>\$12,600</b>	<b>\$18,900</b>	<b>\$21,000</b>	25 total projects	Landscapers Homeowners	<b>Lake protect. grant 2010</b>	Rain gardens, shoreland buffers, infiltration trenches and pits
Rain barrel purchases		<b>\$1,500</b>	<b>\$1,500</b>	40 total rain barrels w/ \$75 subsidy	Local hardware and garden stores	<b>Lake protect. grant 2010</b>	
Retention basins – medium scale projects	<b>Engineering: \$7,000</b>	<b>Installation: \$26,000</b>				<b>Lake protect. grant 2010</b>	
<b>Lake Protection Grant Subtotal</b>	<b>\$28,125 310 hours</b>	<b>\$61,695 430 hours</b>	<b>\$36,830 446 hours</b>				

Action Items <sup>1</sup>	Cost 2010 \$/Vol hours	Cost 2011 \$/Vol hours	Cost 2012 \$/Vol hours	Outcomes/ Data collected	Resources/ Partners	Funding Sources	Notes
<b>Evaluation/Studies</b>					<b>Evaluation Committee</b>		
Monitor runoff from tributaries and other potential areas of concern	\$3,000 50 hours				Consultant	Small scale planning 8/1/09	
Sample VOC and heavy metals from NW tributary	\$1,000 10 hours				Consultant	Small scale planning 8/1/09	
Complete internal load study	20 hours	<b>20 hours</b>	<b>20 hours</b>		District Board Consultant	<b>Lake protection grant</b>	Ongoing monitoring needed
Assess phosphorus from Curly Leaf Pondweed – plant tissue testing and consultant analysis	\$7,990 80 hours				District Board Consultant	Planning grant 8/01/09	CLP mapping included in APM plan
Re-evaluate watershed reduction objectives and in- lake phosphorus goal		\$1,000 100 hours			Comp. Plan Committee Consultant District Board	Planning grant 8/01/09	This must follow internal load study and CLP study.
<b>Lake Protection Grant Subtotal</b>		<b>20 hours</b>	<b>20 hours</b>				

<b>Goal. Maintain and enhance Bone Lake's natural beauty.</b> <b>Goal. Protect and enhance wildlife habitat.</b>							
<b>Action Items<sup>2</sup></b>	<b>Cost 2010 \$/Vol hours</b>	<b>Cost 2011 \$/Vol hours</b>	<b>Cost 2012 \$/Vol hours</b>	<b>Outcomes/ Data collected</b>	<b>Resources/ Partners</b>	<b>Funding Sources</b>	<b>Notes</b>
Identify potential lands for protection		<b>40 hours</b>	<b>40 hours</b>		LWRD DNR	<b>LP Grant 2010</b>	Assign committee and consider implementation
Encourage zoning in Town of Bone Lake and Georgetown	As appropriate	As appropriate	As appropriate		District Board Polk County Zoning & LWRD PCALR Towns		Towns may opt to participate in county zoning.
Encourage DNR and Polk County enforcement of no-wake zones	Ongoing	Ongoing	Ongoing		District Board Polk County Sheriff DNR		

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<sup>2</sup> See previous pages for action item detail.

<b>Goal. Protect and enhance wildlife habitat.</b>							
<b>Objective 1. Engage property owners in observing wildlife, recording and reporting their encounters</b>							
<b>Action Items<sup>3</sup></b>	<b>Cost 2010</b>	<b>Cost 2011</b>	<b>Cost 2012</b>	<b>Outcomes/ Data collected</b>	<b>Resources/ Partners</b>	<b>Funding Sources</b>	<b>Notes</b>
Plant and animal inventory form	\$100 20 hours	\$100 20 hours	\$100 20 hours	Forms returned	LWRD DNR Cornell.edu	Lake protection Grant 2010	\$ for printing and distribution
Website nature blog page	\$1,200 50 hours	\$700 30 hours	\$700 30 hours	Info uploaded to website	JJ Web Services, current host of bonelakewi.com	Lake protection grant 2010	\$ for website, incentives, contests, prizes
Map natural areas along shoreline	\$600 10 hours	\$600 10 hours	\$600 10 hours	Info uploaded to website, returned information cards	LWRD DNR	Lake protection grant 2010	\$ for map, print, distribution, reply cards
Distribute DNR wildlife cards	\$200 20 hours	\$200 20 hours	\$200 20 hours		DNR	Lake prot. grant 2010	
Nature journal workshop	10 hours	\$500 20 hours	\$500 20 hours	Attendance and returned forms, uploaded info	DNR, LWRD Visual Journal Collective, Mpls.	Lake protection grant 2010	
Build and distribute nesting boxes, assembly activity or event	\$500 20 hours	\$500 20 hours	\$500 20 hours	Attendance, returned reports, uploaded info, boxes observed from lakeshore	LWRD, DNR, Cornell.edu, local carpenter	Lake protection grant 2010	Nesting boxes for variety of birds and raptors, small animals, amphibians  Average cost \$10-\$20 each
Guest speakers	\$500 10 hours	\$500 10 hours	\$500 10 hours		LWRD, DNR, MN Raptor Center, Loon Watch, etc.	Lake protection grant 2010	Naturalist with live animals, plants, or birds. Photographer. Visual journal artist.
<b>Obj 1 Lake Protection Grant Subtotal</b>	<b>\$3,100 150 hours</b>	<b>\$3,100 130 hours</b>	<b>\$3,100 130 hours</b>				

<sup>3</sup> See separate reports for action item detail.

<b>Objective 2. Increase residents' understanding of ways to attract wildlife to their property.</b>							
<b>Behavior: Preserve existing and add wildlife habitat to lakeshore property.</b>							
<b>Action Items<sup>4</sup></b>	<b>Cost 2010</b>	<b>Cost 2011</b>	<b>Cost 2012</b>	<b>Outcomes/ Data collected</b>	<b>Resources/ Partners</b>	<b>Funding Sources</b>	<b>Notes</b>
Print and distribute of native plant list with wildlife species key	<b>\$100</b> 10 hours	<b>\$100</b> 20 hours	<b>\$100</b> 20 hours	Coupon for discount on plants at local nursery	DNR, LWRD, local landscapers	<b>Lake protection grant 2010</b>	Collaborative effort with Runoff committee.
Develop and print brochure	—	<b>\$2,000</b> 20 hours	<b>\$1,000</b> 20 hours	Reply form for no-obligation site visit		<b>Lake prot. grant 2010</b>	Collaborative effort with Runoff committee.
<b>Objective 3. Preserve wildlife habitat in public and private land around Bone Lake.</b>							
<b>Behavior: Protect and preserve near shore aquatic plant communities.</b>							
Print and distribute wildlife map/brochure for property owners	<b>10 hours</b>	<b>\$1,500</b> 20 hours	<b>\$1,000</b>	Outcome measured by attendance at event, shared results	DNR, LWRD	<b>Lake protection grant 2010</b>	
What's in the lake Interactive print and screen matching game	—	—	<b>\$2,000</b> 30 hours	Participation in online matching game	JJ Web Services, current host of bonelakewi.com; college animation students	<b>Lake protection grant 2010</b>	
<b>Objective 4. Provide information, education and support to understand the value of native plants in the lakeshore landscape; how to create beautiful and ordered low-maintenance gardens with native plants; the threats of invasive plants in the lakeshore landscape.</b>							
<b>Behavior: Choose native plants for landscaping over horticultural varieties, reduce the area of your lawn.</b>							
Guest speakers, newsletter and website articles	<b>\$250</b> 10 hours	<b>\$250</b> 10 hours	<b>\$250</b> 10 hours	Coupons, site visits, observation from lake	Wild Ones Lesslawn.com	<b>Lake protection grant 2010</b>	
Develop cartoon series			<b>\$500</b> 10 hours	Subscriptions, purchases		<b>Lake prot. grant 2010</b>	
<b>Obj. 2-4 Lake Protection Grant Subtotal</b>	<b>\$350</b> 30 hours	<b>\$3,850</b> 70 hours	<b>\$4,950</b> 90 hours				



**Objective 5. Provide information, education and support to understand the importance of and identify the habitat for threatened and endangered species.**

**Behavior: preserve vernal pools, ponds.**

Action Items	Cost 2010	Cost 2011	Cost 2012	Outcomes/ Data collected	Resources/ Partners	Funding Sources	Notes
Brochure checklist development and printing, website information	10 hours	\$500 10 hours	\$500 10 hours	Site visits	DNR, LWRD	Lake prot. Grant 2010	Collaborate with runoff committee. Include w/objective 1 brochure.
Vernal pools brochure from DNR	\$100 10 hours	\$100 10 hours	\$100 10 hours	Site visit	DNR, LWRD	Lake prot. grant 2010	
Add frog calls to website	\$100 10 hours	\$100 10 hours	\$100 10 hours	Web stats	JJ Web Services	Lake prot. grant 2010	
<b>OVERALL COORDINATION/EDUCATION</b>							
Committee Involvement: Meetings, minutes, reports	100 hours	100 hours	100 hours			Lake prot. grant 2010	6 meetings/year X 2.5 hours X 5 committee members = 100 hours
Display board To be used for all objectives at workshops and meetings.	\$600	\$200	\$200			Lake prot. grant 2010	Initial purchase of quality display and printing of display materials.
<b>Subtotal Obj. 5 and overall Lake Protection Grant Subtotal</b>	<b>\$800 130 hours</b>	<b>\$900 130 hours</b>	<b>\$900 130 hours</b>				

<b>Goal. Maintain and enhance Bone Lake's natural beauty</b>							
<b>Objective 1. Maintain undeveloped natural areas on private and public land.</b>							
<b>Behavior: Stop clearing trees and shrubs and forbs.</b>							
<b>Action Items<sup>5</sup></b>	<b>Cost 2010</b>	<b>Cost 2011</b>	<b>Cost 2012</b>	<b>Outcomes/ Data collected</b>	<b>Resources/ Partners</b>	<b>Funding Sources</b>	<b>Notes</b>
Provide information through web site, newsletters, etc.	10 hours	10 hours	10 hours	Viewed from lake		Lake prot. grant 2010	Overlaps with all wildlife objectives
<b>Objective 2. Enhance natural beauty of developed areas.</b>							
<b>Behavior: Add plants and change building colors to obscure buildings; reduce visual impact of structures on the shore.</b>							
Develop and print brochure	10 hours	\$1,000 10 hours	10 hours	Viewed from lake		Lake prot. grant 2010	
<b>Objective 3. Preserve and enhance the opportunity to observe the beauty of the night sky.</b>							
<b>Behavior: Install lights that reduce glare in shoreland area.</b>							
Provide printed star charts to lake residents	\$500 20 hours	\$500 20 hours	\$500 20 hours	Fewer lights on along the shore; as observed from the lake		Lake prot. grant 2010	
Provide information through web site, newsletters, etc.	20 hours	20 hours	20 hours	Shielded lighting, lights on timers and motion-detectors along the shore as observed from the lake	Darksky.org DNR, security lighting companies	Lake prot. grant 2010	Info re: outdated lighting, shielded lighting, state of the art security lighting for lakeshore properties
<b>Lake Protection Grant Subtotal</b>	<b>\$500 20 hours</b>	<b>\$1,500 20 hours</b>	<b>\$500 20 hours</b>				

<sup>5</sup> See separate reports for action item detail.

<b>Goal. Protect and improve the Bone Lake fishery.</b>							
<b>Action Items<sup>6</sup></b>	<b>Cost 2010</b>	<b>Cost 2011</b>	<b>Cost 2012</b>	<b>Outcomes/ Data collected</b>	<b>Resources/ Partners</b>	<b>Funding Sources</b>	<b>Notes</b>
<b>Fisheries management</b>					<b>Fisheries committee</b>		
Encourage, communicate, and support DNR and Tribal assessment and management of fish populations	150 hours (VOL)	<b>150 hours (VOL)</b>	<b>150 hours (VOL)</b>		DNR Tribes	Lake planning grant 2009	
Install wood habitat	<b>\$4,750 200 hours</b>	<b>\$4,750 200 hours</b>	<b>\$4,750 200 hours</b>	12 sites w/ wood habitat		<b>Lake protection grant 2010</b>	
Install half logs	<b>\$1,170 85 hours</b>	<b>\$1,170 85 hours</b>	<b>\$1,170 85 hours</b>	60 half log structures		<b>Lake protection grant 2010</b>	
Stock smallmouth bass	\$6,675	\$6,675	\$6,675	5 fish/acre		District Board	8,900 2-3" fingerlings stocked in October
<b>Lake Protection Grant Subtotal</b>	<b>\$5,920 285 hours</b>	<b>\$5,920 435 hours</b>	<b>\$5,920 435 hours</b>				

<sup>6</sup> See previous pages for action item detail.

<b>Goal. Maintain safe, effective navigation in Bone Lake.</b>							
<b>Action Items<sup>7</sup></b>	<b>Cost 2010</b>	<b>Cost 2011</b>	<b>Cost 2012</b>	<b>Outcomes/ Data collected</b>	<b>Resources/ Partners</b>	<b>Funding Sources</b>	<b>Notes</b>
<b>Navigation management</b>							
Investigate actions and permits to maintain access to lagoon	Investigate permit requirements				District Board		Proceed with engineering study only if permit likely
Maintain shallow water buoys in approved locations.					District Board		
Manage vegetation in navigation channels as needed					APM Board Lead		See APM plan for implementation

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<sup>7</sup> See previous pages for action item detail.

## Communication and Education

Action Items <sup>8</sup>	Cost 2010 \$/Vol Hours	Cost 2011 \$/Vol Hours	Cost 2012 \$/Vol Hours	Outcomes/ Data collected	Resources / Partners	Funding Sources	Notes
<b>Lake resident education</b> (applies to all goals)					<b>Communications Committee</b>	Lake protection/ planning grants	
District Newsletter	<b>\$1,000</b> <b>100 hours</b>	<b>\$1,020</b> <b>100 hours</b>	<b>100 hours</b> <b>\$1,080</b>	Spring and Fall Newsletter		District Board <b>LP grant 2010</b>	30% of total newsletter cost
Special Annual Lake Mgmt newsletter	<b>\$2,000</b> <b>50 hours</b>	<b>\$2,000</b> <b>50 hours</b>	<b>50 hours</b> <b>\$2,000</b>	Annual Newsletter		District Board <b>LP grant 2010</b>	Focus on key lake management items
Website	<b>\$750</b> <b>100 hours</b>	<b>\$800</b> <b>100 hours</b>	<b>\$850</b> <b>100 hours</b>			District Board <b>LP grant 2010</b>	50% of total web site cost
Workshops and displays at social events	<b>\$500</b> <b>125 hours</b>	<b>\$1,000</b> <b>125 hours</b>	<b>\$1,000</b> <b>125 hours</b>			District Board <b>LP grant 2010</b>	
Annual meetings	<b>\$100</b>	<b>\$100</b>	<b>\$100</b>			District Board <b>LP grant 2010</b>	
Publications	<b>\$500</b> <b>100 hours</b>	<b>\$1,000</b> <b>100 hours</b>	<b>\$1,000</b> <b>100 hours</b>			District Board <b>LP grant 2010</b>	General
Appreciation for LMP volunteers	<b>\$1,000</b> <b>16 hours</b>	<b>\$1,000</b> <b>16 hours</b>	<b>\$1,000</b> <b>16 hours</b>			District Board <b>LP grant 2010</b>	60-80 lake volunteers
Plan administration	<b>250 hours</b>	<b>225 hours</b>	<b>225 hours</b>				LMP Chairs
<b>Subtotal Lake Protection Grant</b>	<b>\$5,850</b> <b>741</b>	<b>\$6,920</b> <b>716</b>	<b>\$7,030</b> <b>716</b>				

<sup>8</sup> See lake management plan for action item detail.

## **Bone Lake Waterfront Runoff Education/Marketing Plan**

**Target Market:** Homeowners (*initially those most likely to be early adopters of waterfront runoff practices*)

### **Homeowner Main Concerns**

1. Water clarity/algae bloom
2. Land values

### **Obstacles**

1. Plan misunderstandings
2. Lack of knowledge of waterfront runoff problems and solutions
3. Won't attend meetings
4. Don't live here
5. Too busy
6. Don't care, don't want to attend meetings or seminars
7. It's not me (someone else)
8. Current marketing pieces seem pushy - example: checklist (*explains what to do before people have bought into the idea of doing something*)
9. Costs borne by homeowner
10. Inertia – people don't like to make changes

### **Action Plans to Address Obstacles** (*provide accurate and helpful information*)

1. Direct mailings
2. Newsletter articles with separate brochure inside newsletter
3. Info tables at meetings & social events (lake fair, annual meeting, fun run)
4. Facebook site
5. Website
6. One on one discussions with friends and neighbors on the lake
7. Social gatherings on the weekend (*look for volunteer hosts who have completed projects, support these with grant \$*)
8. Incentives: landscaper coupons, one time payments probably not enough, recurring county tax break would be good

#### 1. Mailings

- Single postcard style piece emphasizes protecting your waterfront investment encourages 2<sup>nd</sup> piece
- Self evaluation checklist for waterfront runoff encourages 3<sup>rd</sup> piece
- Site visit request form
- Follow up mailings of same information to keep in front of homeowners

#### Segment lake into 3 areas

1. Most likely to participate (2010)
2. Most likely to be able to infiltrate water – septic drainfield owners (Begin in 2011)
3. Questionable cause or not a problem
4. Most likely not a cause of problem

Wave mailing start with area 1, then 2, then 3, then 4

Procedure for sending postcard is a wave mailing of X many per week followed up 1 week later with a call from committee/board member or additional mailing, asking if they would like 2<sup>nd</sup> piece which is self evaluation or any other information

Answer 'No' – invite them to meeting etc, steer to Facebook & website

Answer 'Yes' – send material with return envelope

Based on evaluation ask homeowner (if appropriate) if they would like a site evaluation

Conduct site evaluation in 2 phases –

#1 no strings, site assessment visit: understand landowner interests and concerns, identify simple “do it yourself” steps, encourage further measurements/design visit

#2 design visit: more careful measurements taken and designs and cost estimates developed

Finally: cost sharing and installation

## 2. Newsletter Articles

Education on statistics and cause/no reference on what they should change in the beginning only

- May Newsletter – Article
- Late July Newsletter – Article & Postcard
- November Newsletter – Article & Brochure

## 3. Meetings and Social Events

Make sure postcard (1), brochure (4), self evaluation checklist (2), and site visit request (3), available and include Bone Lake contact info (*numbers refer to material shortcomings below*)

Not too much information, the goal is a site assessment visit request

Dates: April 10<sup>th</sup> (board mtg.); June 5<sup>th</sup> (fun run); June 26<sup>th</sup> (lake fair); August 14<sup>th</sup> (annual mtg.) [table displays]

## 4. Facebook (work with Communications committee)

- Develop a Friends of Bone Lake Facebook site
- Update meetings and social events to all friends
- Connect to website with more in-depth information

## 5. Website

- Links to Facebook etc
- Links to DNR etc
- In-depth information
- Section dedicated to the above key pieces: post card, brochure, self evaluation, site visit
- Dates & locations
- Agenda's, meeting minutes, etc

## **Materials Shortcoming**

1. No postcard designed now - other info too much (develop in 2010)
2. Self evaluation checklist (update in 2010)  
If you answer No it tells you something at this point you don't want to hear – need to remove “what to do info” perhaps just add up score which leads to: you might have a problem, request a visit.
3. Site visit request form  
Bottom half should go be introduced later in the process
4. Develop brochure to be put in newsletter & handed out at meeting etc that quite frankly will make the average homeowner have a measure of concern about the 2 main concerns (*possibly customize the checklist*)
5. Brochures need to be personalized to Bone Lake
6. Facebook & Website design etc

## **Important dates to remember:**

Bone Lake newsletter: early May, late July (report grant application results), November

Next Board meeting: April 10

Bone Lake Run (June 5) and other qtrly social events

Annual meeting: August 14

We need to decide what to call the visit  
and use consistent language

## No Strings Attached Site Visit Waterfront Runoff Quick Evaluation Form

[LINK TO EXCEL SPREADSHEET COLUMNS]

Name\_\_\_\_\_

Bone Lake Property Address\_\_\_\_\_

Mailing Address\_\_\_\_\_

Telephone (best)\_\_\_\_\_Telephone (second)\_\_\_\_\_

Email Address\_\_\_\_\_

Date of Visit\_\_\_\_\_

Time of Visit\_\_\_\_\_

Evaluator\_\_\_\_\_

Owner(s) present\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Polk County WI GIS Map



### LEGEND

X = Septic drainfield

O = Septic holding tank

W = Well

----- = Channelized flow

### PRELIM RECS

NP = Native Plantings

RB = Rain Barrel

RG = Rain Garden

Property slope:

Soils:

Shoreline: rip rap lawn native veg  
(circle)

Known underground utilities?

Call Diggers Hotline before digging!

800.242.8511 or [diggershotline.com](http://diggershotline.com)



# Site Checklist (circle appropriate answer)

## Review introductions/program information

**Heard about project:** word-of mouth newsletter meeting workshop \_\_\_\_\_

**Landowner interests:** Water quality Habitat Native plants Land Use Permit \_\_\_\_\_  
Describe:

**Landowner observed runoff concerns:** channelized flow erosion ponding \_\_\_\_\_  
Describe:

## Drainage from (describe location and extent of drainage area):

Area 1 \_\_\_\_\_

Area 2 \_\_\_\_\_

Area 3 \_\_\_\_\_

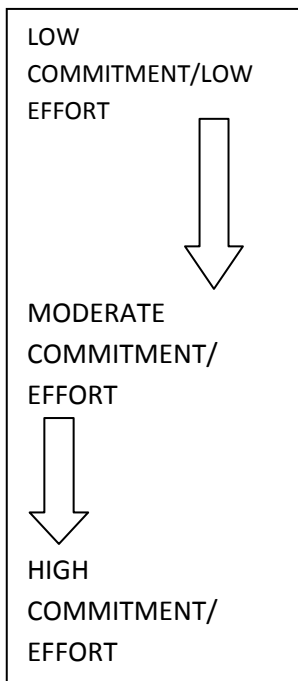
## Native planting recommendations:

\_\_\_\_\_ Plant List \_\_\_\_\_ Top Species \_\_\_\_\_

Area A \_\_\_\_\_

Area B \_\_\_\_\_

Area C \_\_\_\_\_



RECOMMENDATIONS/INTEREST				
✓ If recommended	Suggestion	Cost Share? <sup>1</sup>	Comment	Permit Required?
	Divert Water			
	Rain Barrel			No
	Wildlife Plantings	No		
	Invasive Species Removal			
	Goose-proof Shoreline	No		
	Rain Garden <sup>1</sup>	70%		
	Wood Habitat	100%		Yes
	Rock Infiltration Trench	70%		
	Rock Infiltration Pit	70%		
	Shoreline Buffer Zone	70%		

<sup>1</sup> Note that your labor can provide a portion of the match



## Interested in learning more?

Request a design visit!

At this visit an independent, private water quality landscape expert will . . .

- ask you additional questions about your interests
- take measurements and photos of your property
- develop a design for water quality practices at ***your*** level of commitment

Fill in the form below and send to:

Name of lake volunteer, ADDRESS

NAME\_\_\_\_\_

LAKE PROPERTY ADDRESS\_\_\_\_\_

BEST CONTACT\_\_\_\_\_

I am interested in pursuing the following from the recommendations/interest form:\_\_\_\_\_

\_\_\_\_\_

QUESTIONS? PLEASE CALL xxx AT xxx

### **Runoff quick evaluation (draft 3/26/10)**

Schedule visits at 1 hour intervals

Expect a 45 minute visit

1. Promote free, no strings attached, quick runoff evaluation visits
2. Sign-ups for quick eval visits sent to XXXXX.
3. Harmony dates for quick eval visits in July (15), August (15), and Sept.(10):  
8 visits/day or 4/evening (schedule visits on the hour every hour)  
Begin Thursday July 1 or Tuesday July 6
4. Lake district rep schedules visits with landowners
5. Harmony prepares quick eval sheets.
6. Harmony conducts site visits on designated days, completes quick eval. sheets and mails copy to landowner.
7. Landowner requests follow-up visit design visit.

### **Runoff design visits**

Lake volunteer schedules visits at 2 hour intervals

Harmony will designate days in late July (5 visits), August (5 visits), and Sept. (5 visits) (Breanna)

Harmony

- conducts site visit and returns design and cost estimate information to landowner.
- offers and provides email and telephone consulting services to landowners to follow-up on design and installation questions
- drafts cost share agreement if landowner wishes to go ahead and sends to landowner
- provides design to lake district along with draft cost share agreement
- provides inspection of installed practices

Forecast wood habitat costs for 4 sites in 2010

40 trees trucked in, 6 inch hardwoods	\$1000
Hayward crew, one day 2 sites North end	\$2000
Hayward skid steer, one day 2 sites, pt Golden, small island	\$680
Duck bill anchors, 40 at \$7 ea	\$240
1/8 steel cable, 500 ft at \$.35/ft plus cable clamps	\$200
Nicro press tool	\$150
Twine	\$30
4 DNR permits	\$200
Plowing	<u>\$250</u>
Total	\$4750

Volunteer hours for wood habitat one year

5 people cabling 4 sites 2 days	80 hours
5 people 2 days towing trees	80 hours
Wayne and Bob coordinating	<u>40 hours</u>
Total	200 hours

3 years wood habitat program \$14,250

600 volunteer hours for wood habitat program for 3 years

# Half Log Fish Habitat

20 Half Log Structures placed in various locations throughout the lake

Sawmill will provide logs

10 logs 8' cut and delivered.....\$310.00

Cost of 40 concrete blocks @ \$1.49 ea..... \$59.60

Hardware 12"bolts, nuts, washers, bits.....\$150.00

Pontoon rental for placing structures.....\$250.00

Diver for in water placement.....\$200.00

4 permits @ \$50.00 ea.....\$200.00

Based on 4 areas with 5 half logs each

Volunteer Hours 5 people two days to build structures and place in lake.

One person 3 hours to go to Menards for Hardware and Blocks

Total Volunteer Hours 83

Total Cost.....\$1,169.60

Three Year Cost.....\$3,508.80

Three Year Volunteer Hours.....249