A

APPENDIX A

Public Participation Materials

Two Sisters Lake
Management Planning Project
Kick-Off Meeting
July 9, 2011 – 9:00 AM
McNaughton Pub
5340 Bridge Road

Aquatic ecologist, Tim Hoyman, speaks to a lake group in Waushara County about their lake management plan. Public participation will be an integral part of the Two Sisters Lake project.

The Two Sisters Lake Property Owners Association has received two grants totaling nearly $20,000 from the Wisconsin Department of Natural Resources to partially fund the completion of a comprehensive management plan for Two Sisters Lake. A third grant will be applied for in August of 2011. The design for the planning project has been finalized and approved by the WDNR and includes two primary objectives: 1) the completion of in-depth studies including multiple plant surveys, water quality sampling, and watershed investigations; and 2) the completion of a realistic management plan for the lake and its watershed. Most of the studies will be completed during the spring, summer and fall of 2011. The tasks associated with the analysis of the data will be completed during the following fall and winter. The project will also incorporate opportunities for stakeholder education and input, which are both very important components of all lake management planning efforts. The first opportunity for your participation in the process will be at the Project Kick-off Meeting to be held on Saturday, July 9th at 9:00 am at the McNaughton Pub (5340 Bridge Rd., west of Rhinelander off of Highway 47). In addition to this meeting as well as others, an additional opportunity for your input will be through a written stakeholder survey that will be distributed during the project.

Onterra, LLC, a lake management planning firm out of De Pere, has been hired to lead the project. During the meeting, Eddie Heath, an aquatic ecologist with Onterra, LLC, will describe the project and its importance. The presentation will include a description of the project's components, a quick course on general lake ecology, and a breakdown of how the Association's Planning Committee will be involved in the plan's completion. So, please plan on attending the meeting and do not hesitate to ask questions or make comments.

Two Sisters Lake Management Plan
Unofficial Partial Summary Report by John Kraus
June 30, 2012

Two sisters lake is technically classified as a spring lake. Headwater drainage lakes encompass this lake type. Therefore, TSL is designated as a headwater drainage lake.

Shoreline length is 8.9 miles

- 3.9 miles (45%) is natural/undeveloped – beneficial to the lake
- 3.9 miles (44%) is developed-semi natural – neutral to the lake
- 1 mile (11%) is urbanized & developed-unnatural – potentially harmful to the lake

On July 9, 2011, a project kick-off meeting was held at the McNaughton Pub to introduce the project.

Numerous field studies were conducted by Onterra on Two Sisters Lake during 2011 & 2012 to sample the water and vegetation.

- Tests show that the phosphorus values, chlorophyll and water clarity are all rated as excellent. Water visibility on an average is close to 20 feet.

In July & August vegetation was sampled.

- 61 native aquatic plants were found in TSL. No non-native, invasive species were found.

A survey was developed by committee members with coordination between Onterra and the DNR.

During October 2011 this nine-page survey was mailed to 180 property owners on Two Sisters Lake. 122 (69%) of the surveys were returned and those results were entered into a spreadsheet by Joe Steinhage, a committee member.

Those responding to the survey indicated that:

- 44% own summer residences on the lake
- 21% own year-round residences
- 21% own a property that is visited on weekends throughout the year.
- 53% have owned their property for more than 25 years.
- 43 % said their property would be pass on to a family member
- 36% said they would continue to own their property
- A vast majority use their property for relaxing/entertaining

Issues of concern about the lake expressed by property owners are:

- Preventing invasive species from entering the lake
- Jet Ski usage
- Maintaining water quality
- Lake shore development

Presentation Outline

- Onterra, LLC
- Why Create a Management Plan?
- Elements of a Lake Management Planning Project
  - Data & Information
  - Planning Process

Onterra LLC
Lake Management Planning

Onterra, LLC

- Founded in 2005
- Staff
  - Four full-time ecologists
  - One part-time ecologist
  - One field technician
  - Two summer interns
- Services
  - Science and planning
- Philosophy
  - Promote realistic planning
  - Assist, not direct

Onterra LLC
Lake Management Planning

Why create a lake management plan?

- To create a better understanding of lake's positive and negative attributes.
- To discover ways to minimize the negative attributes and maximize the positive attributes.
- To foster realistic expectations and dispel myths.
- To create a snapshot of the lake for future reference and planning.

Onterra LLC
Lake Management Planning

Elements of an Effective Lake Management Planning Project

Data and Information Gathering

Environmental & Sociological

Planning Process

Brings it all together

Onterra LLC
Lake Management Planning

Data and information gathering

- Study Components
  - Water Quality Analysis
  - Watershed Assessment
  - Shoreline Assessment
  - Aquatic Plant Surveys
  - Fisheries Data Integration
  - Zebra Mussel Survey
  - Stakeholder Survey

Onterra LLC
Lake Management Planning

Water Quality Analysis

- General water chemistry (current & historic)
  - Citizens Lake Monitoring Network
- Nutrient analysis
  - Lake trophic state (Eutrophication)
  - Limiting plant nutrient
- Supporting data for watershed modeling

Onterra LLC
Lake Management Planning

Watershed Assessment

- Delineation of drainage basin
- Modeling
  - Land cover
  - Phosphorus loading
  - Scenario development

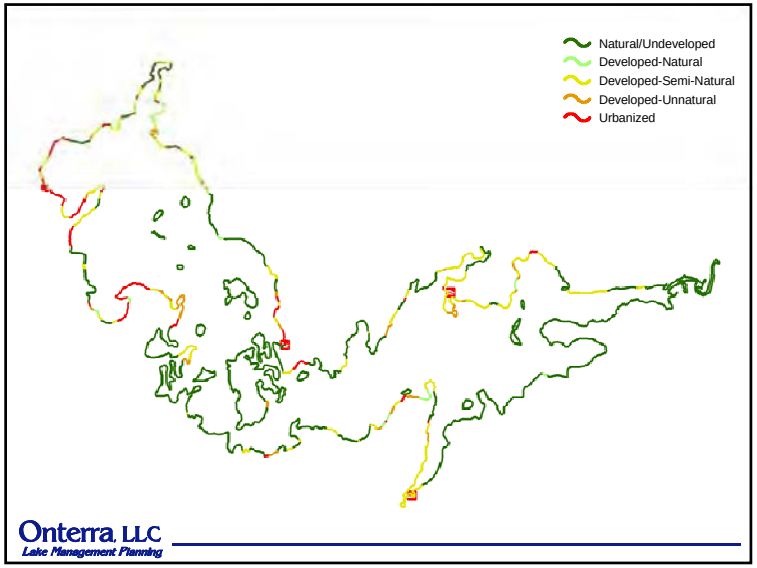
Onterra LLC
Lake Management Planning

Shoreland Assessment

- Shoreland area is important for buffering runoff and provides valuable habitat for aquatic and terrestrial wildlife.
- It does not look at lake shoreline on a property-by-property basis.
- Assessment ranks shoreland area from shoreline back 35 feet

Urbanized → Range → **Natural**

Onterra LLC
Lake Management Planning



Onterra LLC
Lake Management Planning

Non-native Aquatic Plants

Curly-leaf Pondweed

Not Found in 2011 Survey

Onterra LLC
Lake Management Planning

Non-native Aquatic Plants

Eurasian Water Milfoil

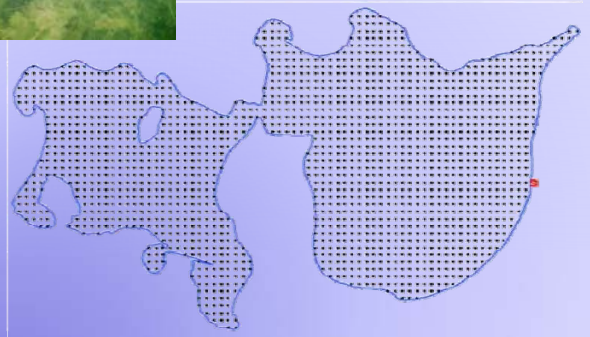
Onterra LLC
Lake Management Planning

Aquatic Plant Surveys

- Concerned with both native and non-native plants
- Multiple surveys used in assessment
  - Curly-leaf pondweed survey
  - Point-intercept survey

Onterra LLC
Lake Management Planning

Two Sisters Lake
41-meter resolution
1,735 total points



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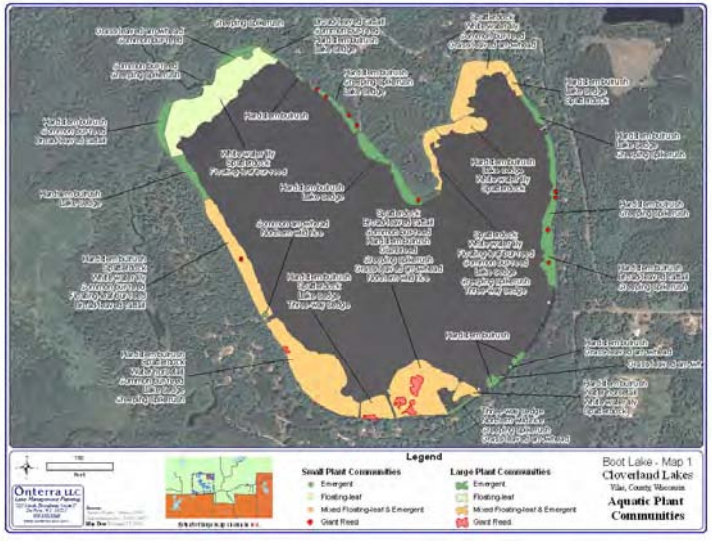
Lake Management Planning

Aquatic Plant Surveys

- Concerned with both native and non-native plants
- Multiple surveys used in assessment
  - Curly-leaf pondweed survey
  - Point-intercept survey
  - Plant community mapping

Onterra LLC
Lake Management Planning



Aquatic Plant Surveys

- Concerned with both native and non-native plants
- Multiple surveys used in assessment
  - Curly-leaf pondweed survey
  - Point-intercept survey
  - Plant community mapping
  - Volunteer survey findings

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Lake Management Planning

Fisheries Data Integration

- No fish sampling completed
- Assemble data from WDNR, USGS, USFWS, & GLIFWC
- Fish survey results summaries (if available)
- Use information in planning as applicable

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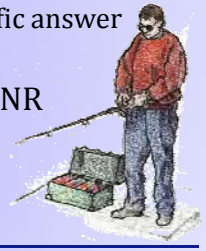
Lake Management Planning

Stakeholder Survey

- Standard survey used as base
  - Planning committee potentially develops additional questions and options
  - Must not lead respondent to specific answer through a "loaded" question
- Survey must be approved by WDNR



Onterra LLC
Lake Management Planning

Planning Process

Planning Committee Meetings

Study Results (including a stakeholder survey)
Conclusions & Initial Recommendations
Management Goals
Management Actions
  Timeframe
  Facilitator(s)

↓

Implementation Plan

Onterra LLC
Lake Management Planning

Thank You

Many of the graphics used in this presentation were supplied by:

Wisconsin Lakes Partnership

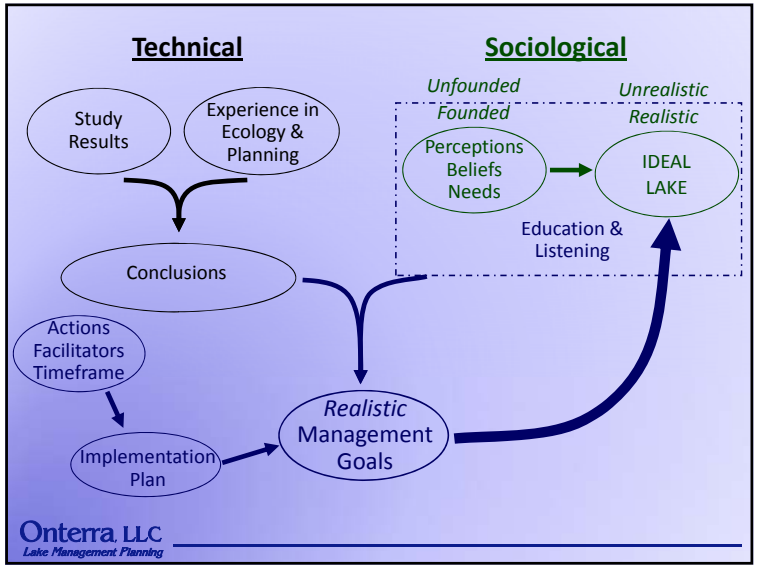
UWEX Extension

Wisconsin Dept. of Natural Resources

Onterra LLC
Lake Management Planning

The Planning Process

…it's not as easy as you may think.



Presentation Outline

- **Lake Management Planning Project Overview**
- **Study Results**
  - Water Quality
  - Watershed
  - Aquatic Plants
  - Fisheries
- **"Big Picture"**

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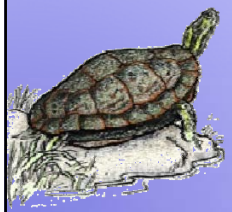
Lake Management Planning

Study and Plan Goals

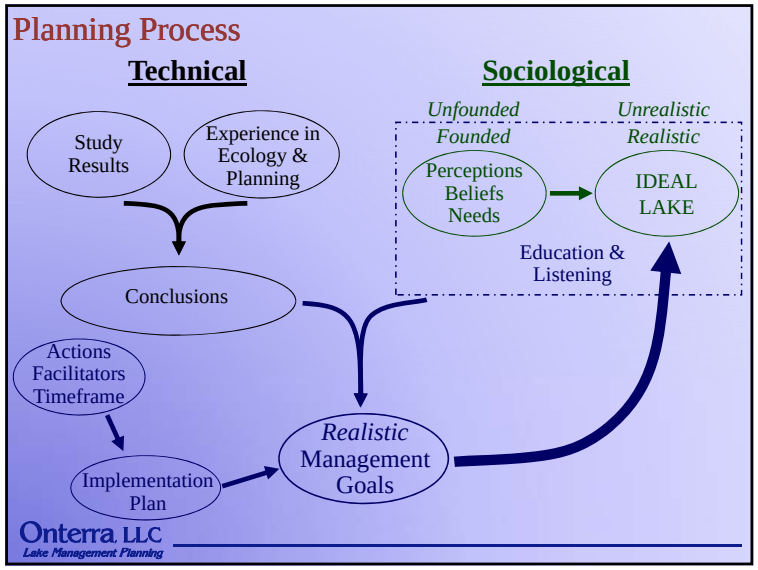
- Collect & Analyze Data
- Construct Long-Term & Useable Plan



Onterra LLC
Lake Management Planning

The Planning Process

…it's not as easy as you may think.


Planning Process
Technical
Sociological
Study Results
Experience in Ecology & Planning
Unfounded
Founded
Unrealistic
Realistic
Perceptions Beliefs Needs
IDEAL LAKE
Education & Listening
Conclusions
Actions Facilitators Timeframe
Implementation Plan
Realistic Management Goals
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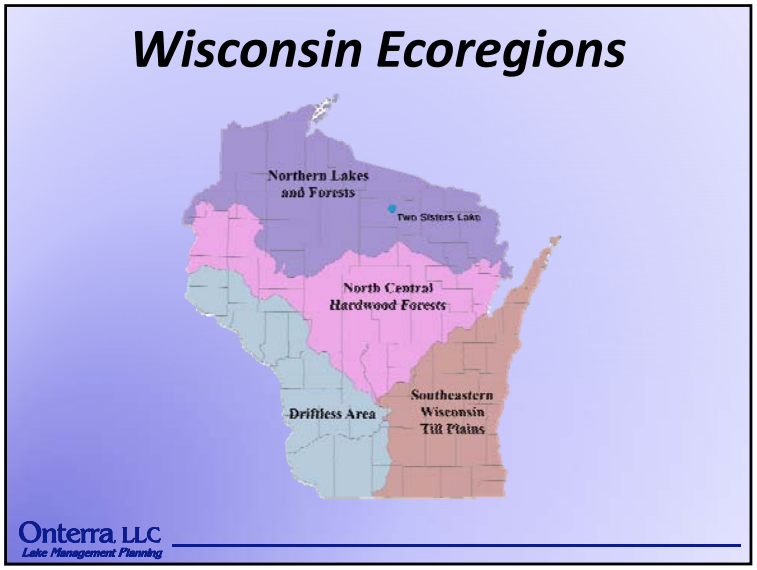
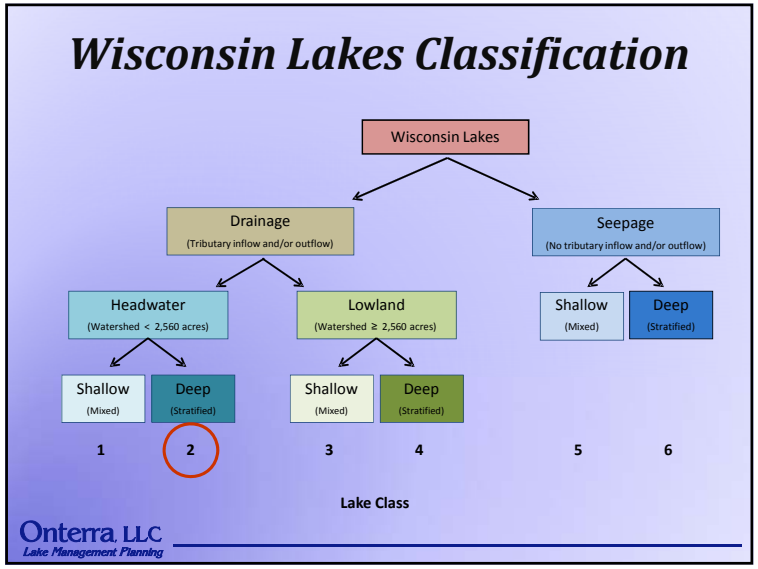
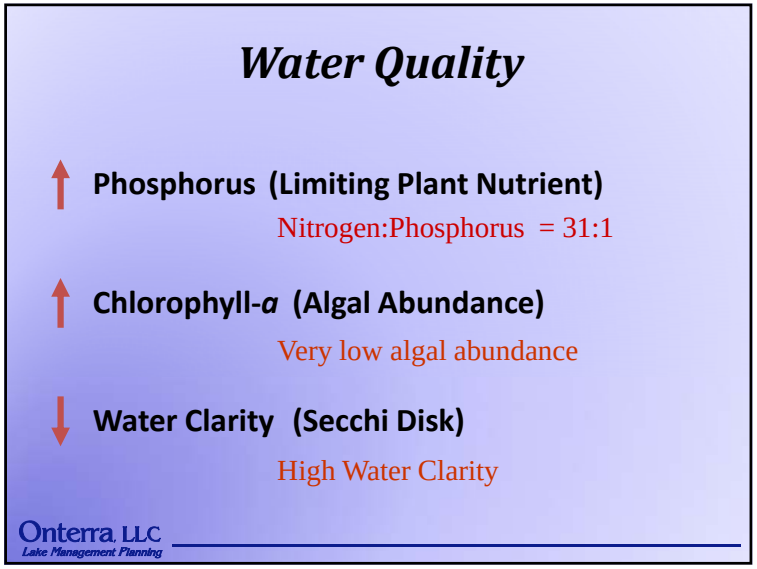
Lake Management Planning


Wisconsin Ecoregions
Northern Lakes and Forests
Two Sisters Lake
North Central Hardwood Forests
Driftless Area
Southeastern Wisconsin Till Plains
Onterra LLC
Lake Management Planning


Wisconsin Lakes Classification
Wisconsin Lakes
Drainage
(Tributary inflow and/or outflow)
Seepage
(No tributary inflow and/or outflow)
Headwater
(Watershed < 2,560 acres)
Lowland
(Watershed ≥ 2,560 acres)
Shallow
(Mixed)
Deep
(Stratified)
Shallow
(Mixed)
Deep
(Stratified)
Shallow
(Mixed)
Deep
(Stratified)
1
2
3
4
5
6
Lake Class
Onterra LLC
Lake Management Planning


Water Quality
Phosphorus (Limiting Plant Nutrient)
Nitrogen:Phosphorus = 31:1
Chlorophyll-a (Algal Abundance)
Very low algal abundance
Water Clarity (Secchi Disk)
High Water Clarity
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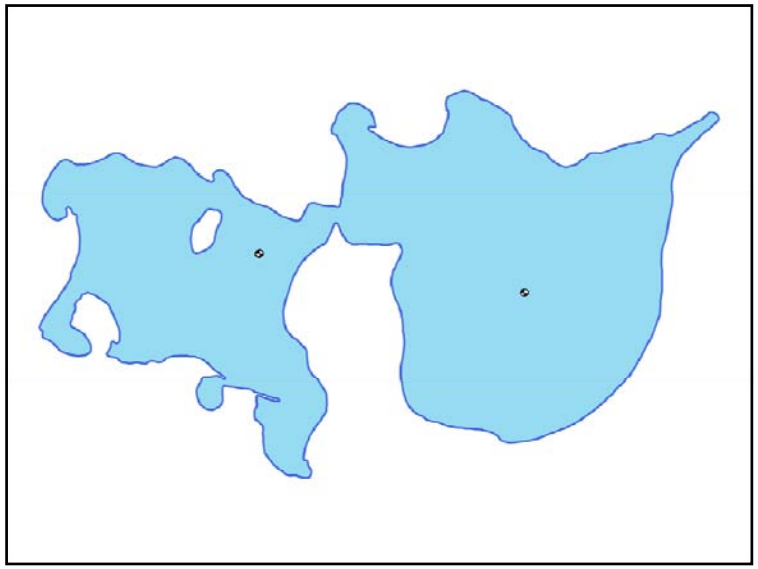

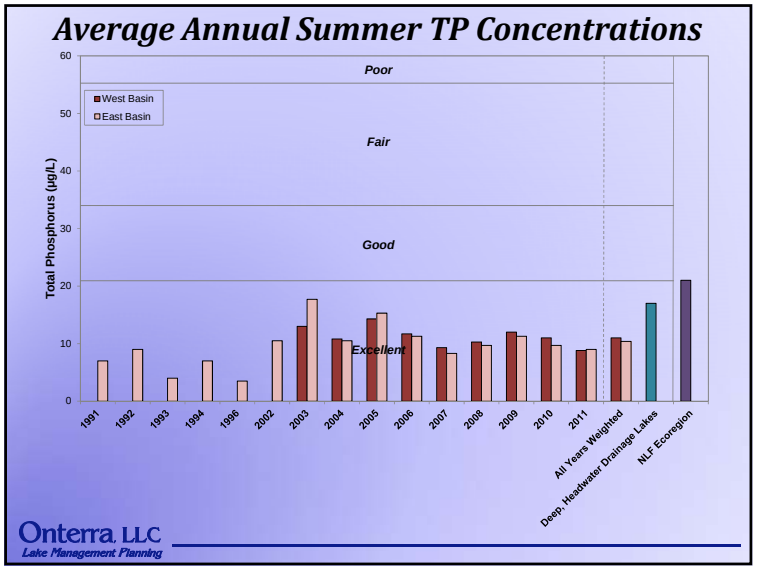
Average Annual Summer TP Concentrations
Total Phosphorus (µg/L)
West Basin
East Basin
Poor
Fair
Good
Excellent
1991
1992
1993
1994
1996
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
All Years Weighted
Deep, Headwater Drainage Lakes
NLF Ecoregion
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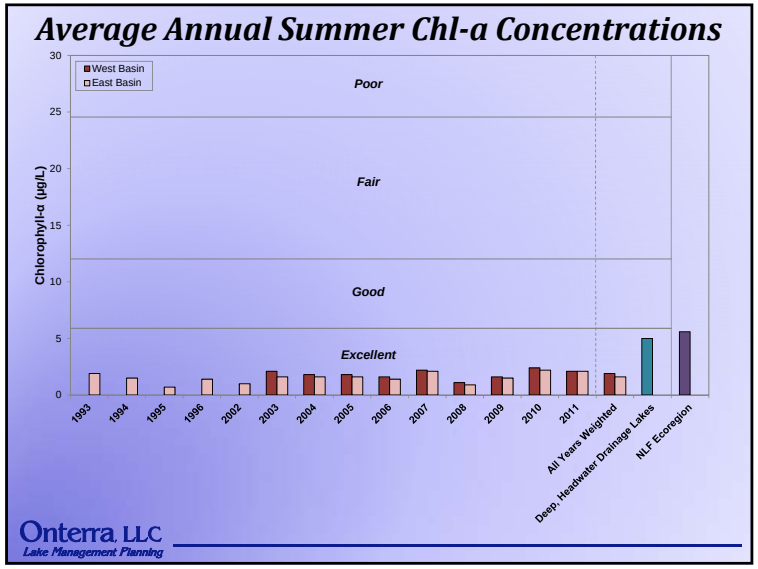
Average Annual Summer Chl-a Concentrations
Chlorophyll-a (µg/L)
West Basin
East Basin
Poor
Fair
Good
Excellent
1993
1994
1995
1996
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
All Years Weighted
Deep, Headwater Drainage Lakes
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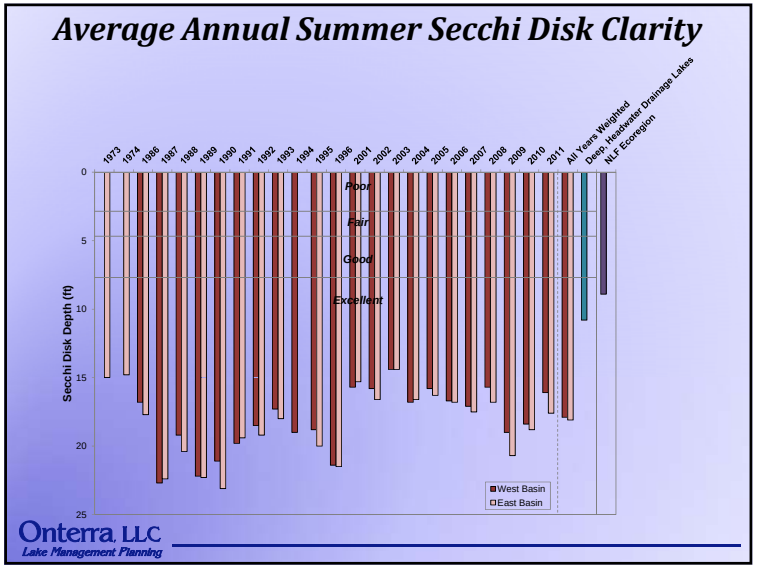
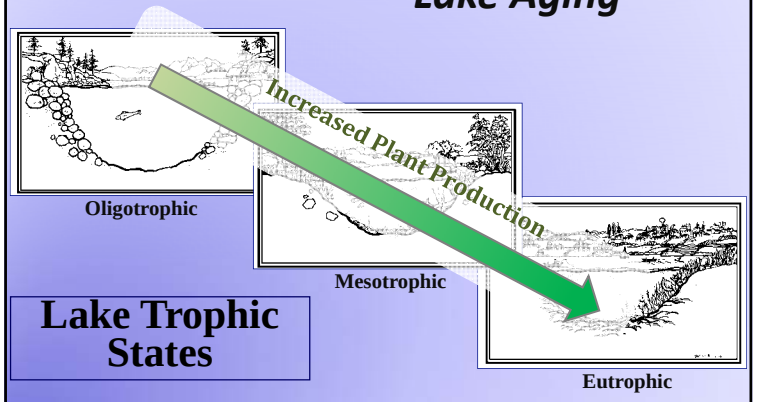

Average Annual Summer Secchi Disk Clarity
Secchi Disk Depth (ft)
West Basin
East Basin
Poor
Fair
Good
Excellent
All Years Weighted
Deep, Headwater Drainage Lakes
NLF Ecoregion
Onterra LLC
Lake Management Planning

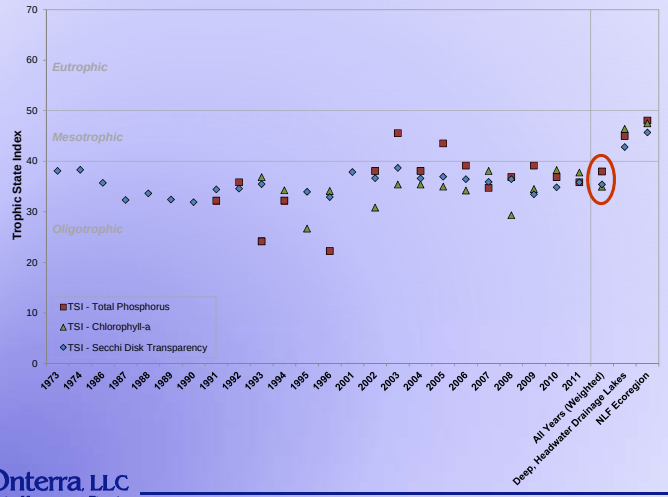
Eutrophication
-Lake Aging



Lake Trophic States

Onterra LLC
Lake Management Planning

Trophic State Index – East Basin



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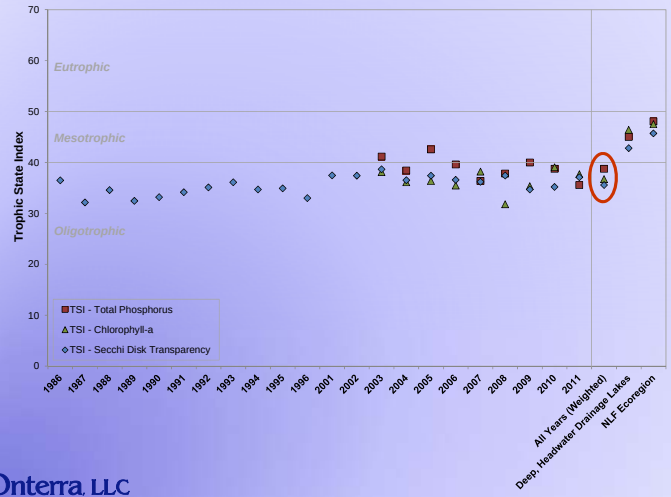
Trophic State Index – West Basin



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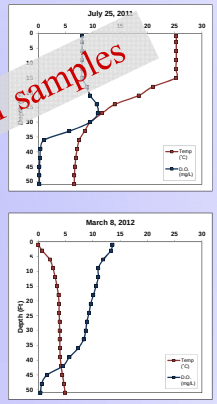
Lake Management Planning

Other Water Quality Results

- Lake thermally stratifies during summer months
- No indication of low winter dissolved oxygen
- Alkalinity = 28.7 mg/L as $CaCO_3$ – indicates very little sensitivity to acid rain
- Low calcium concentrations (7.0 mg/L)
  - Not suitable for mussel establishment



No veligers observed in 2011 samples

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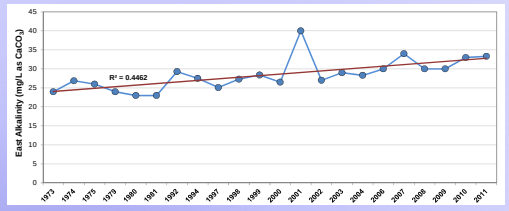
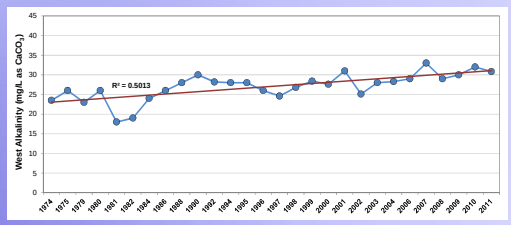
Lake Management Planning

Other Water Quality Results - Alkalinity





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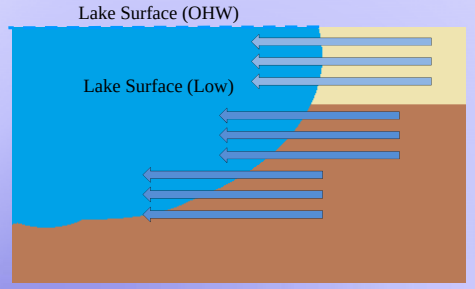
Lake Management Planning



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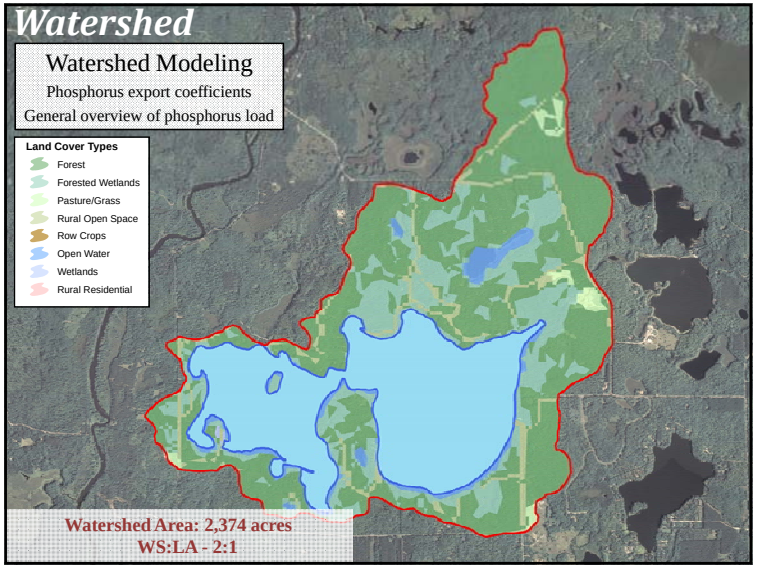
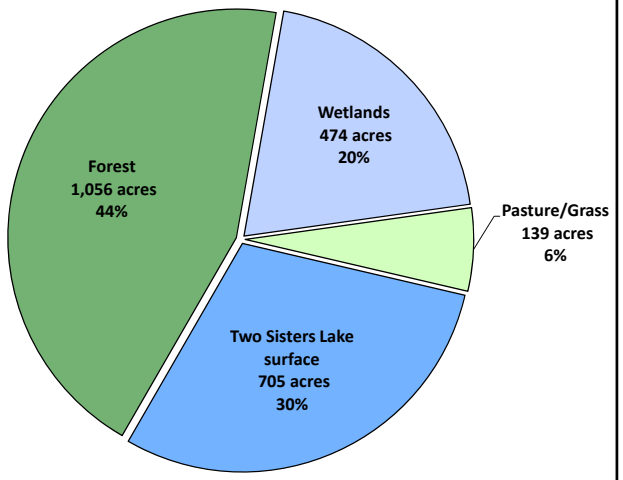
Watershed

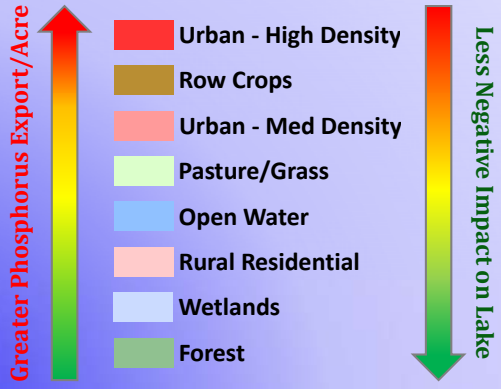
Watershed Modeling
Phosphorus export coefficients
General overview of phosphorus load



Watershed



Watershed Land Cover



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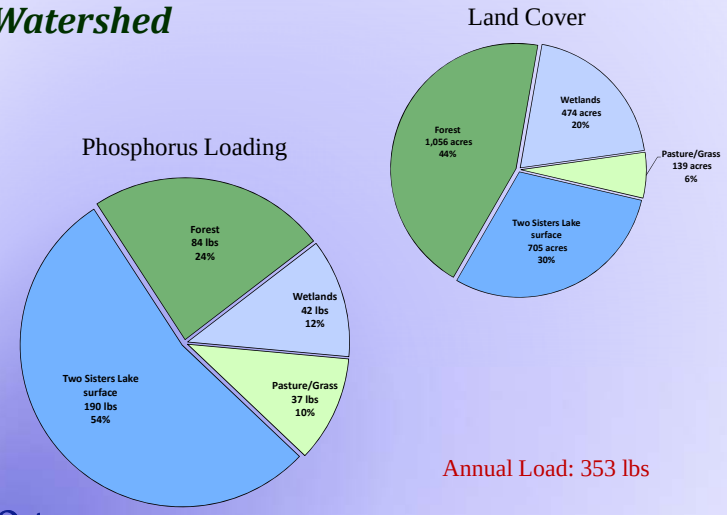
Lake Management Planning

Watershed Land Cover



Annual Load: 353 lbs

Onterra LLC
Lake Management Planning

Shoreland Assessment

- Shoreland area is important for buffering runoff and provides valuable habitat for aquatic and terrestrial wildlife.
- It does not look at lake shoreline on a property-by-property basis.
- Assessment ranks shoreland area from shoreline back 35 feet

Urbanized Range **Natural**

Onterra LLC
Lake Management Planning

Shoreline Assessment Category Descriptions

Onterra LLC
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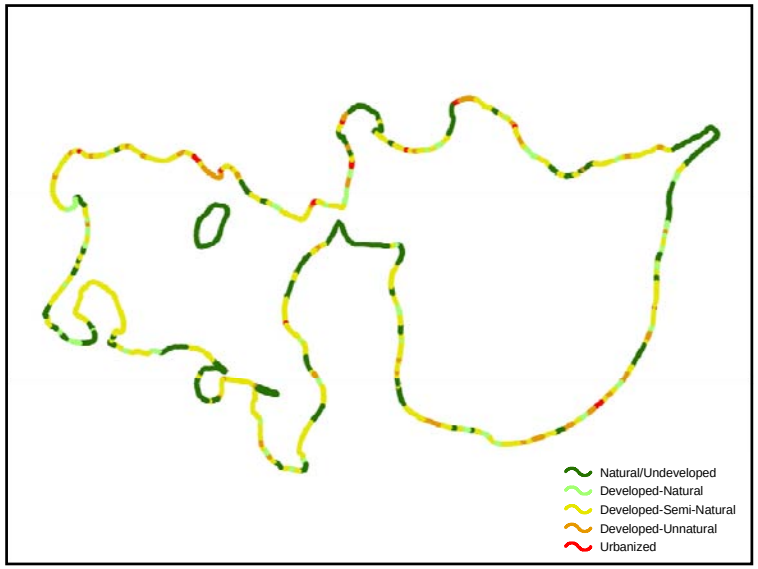

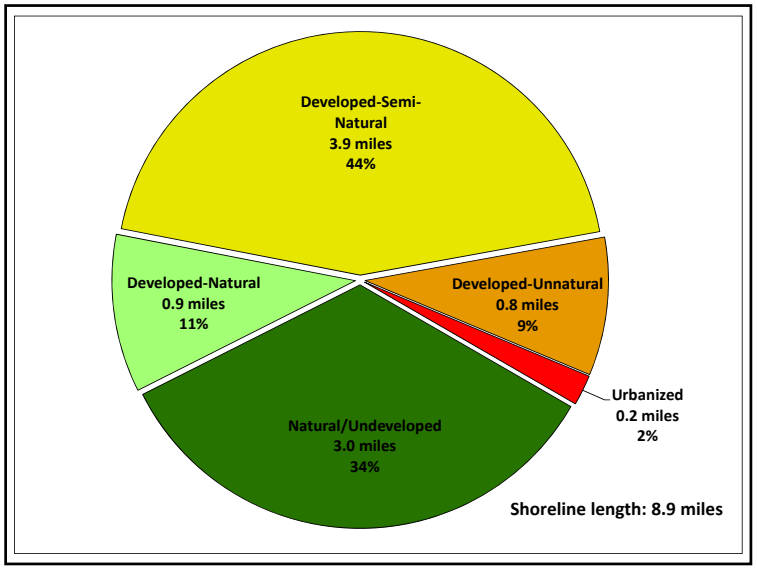

Aquatic Plant Surveys

- Concerned with both native and non-native plants
- Multiple surveys used in assessment
  - Curly-leaf pondweed survey
  - Point-intercept survey
    - Systematic sampling method
    - Can compare lakes within same ecoregion
  - Plant community mapping
    - Accurately map floating-leaf & emergent communities
    - May compare to future surveys

NONE FOUND

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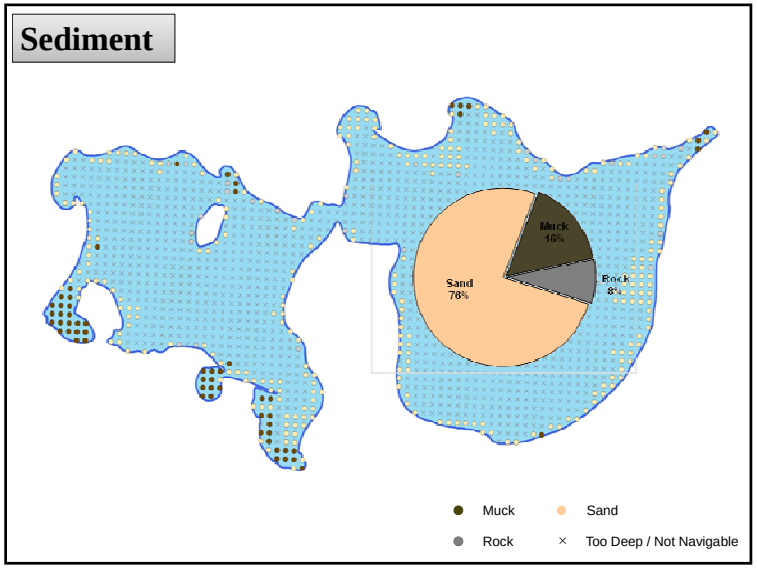
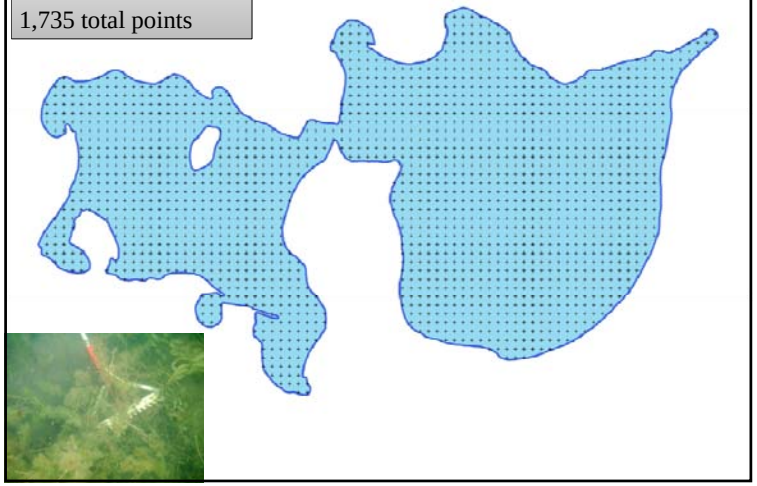
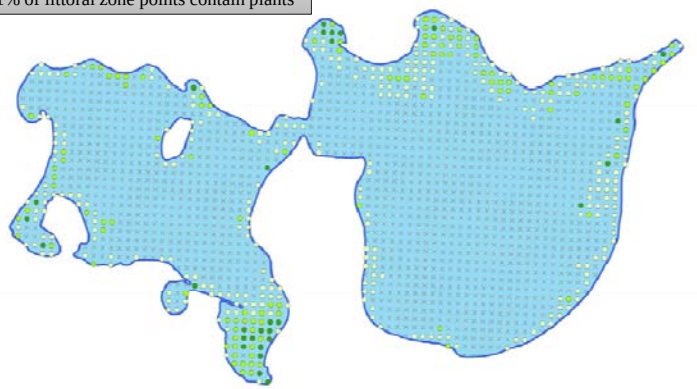


Two Sisters Lake
41-meter resolution
1,735 total points



Two Sisters Lake
Maximum depth of plants = 30 feet
61% of littoral zone points contain plants



Species List

- **61 Native Species**
  - 41 from the PI survey
- **No non-native species located**
- **2 species of 'special concern'**
  - Vasey's pondweed
  - Small purple bladderwort

Life Form	Scientific Name	Common Name	Coefficient of Conservatism (C)	2011 (Onterra)
Emergent	*Calla palustris*	Water arum	9	I
	Carex comosa	Bristly sedge	5	I
	Carex lasiocarpa	Woolly-fruit sedge	9	I
	Carex rostrata	Beaked sedge	10	I
	Carex sinicta	Common tussock sedge	7	I
	Dulichium arundinaceum	Three-way sedge	9	I
	Eleocharis palustris	Creeping spikerush	6	X
	Equisetum fluviatile	Water horsetail	7	I
	Glyceria canadensis	Rattlesnake grass	7	I
	Iris versicolor	Northern blue flag	5	I
	Juncus effusus	Soft rush	4	I
	Lysimachia terrestris	Bulbil loosestrife	7	I
	Pontederia cordata	Pickerelweed	9	X
	Sagittaria latifolia	Common arrowhead	3	I
	Sagittaria rigida	Stiff arrowhead	8	X
	Schoenoplectus acutus	Hardstem bulrush	5	X
	Schoenoplectus tabernaemontani	Softstem bulrush	4	I
FL	*Brasenia schreberi*	Watershield	7	X
	Nuphar variegata	Spatterdock	6	X
	Nymphaea odorata	White water lily	6	X
	Polygonum amphibium	Water smartweed	5	I
FLE	*Sparganium angustifolium*	Narrow-leaf bur-reed	9	X
	Sparganium emersum	Short-stemmed bur-reed	8	I
Submergent	*Bidens beckii*	Water marigold	8	X
	Ceratophyllum demersum	Coontail	3	X
	Chara spp.	Muskgrasses	7	X
	Elatine minima	Waterwort	9	X
	Elodea canadensis	Common waterweed	3	X
	Eriocaulon aquaticum	Pipewort	9	X
	Gratiola aurea	Golden pert	10	X
	Isoetes spp.	Quillwort species	8	X
	Lobelia dortmanna	Water lobelia	10	X
	Myriophyllum alterniflorum	Alternate-flowered water milfoil	10	X
	Myriophyllum sibiricum	Northern water milfoil	7	X
	Myriophyllum tenellum	Dwarf water milfoil	10	X
	Najas flexilis	Slender naiad	6	X
	Nitella spp.	Stoneworts	7	X
	Potamogeton alpinus	Alpine pondweed	9	X
	Potamogeton amplifolius	Large-leaf pondweed	7	X
	Potamogeton epihydrus	Ribbon-leaf pondweed	8	X
	Potamogeton foliosus	Leafy pondweed	6	X
	Potamogeton gramineus	Variable pondweed	7	X
	Potamogeton illinoensis	Illinois pondweed	6	X
	Potamogeton natans	Floating-leaf pondweed	5	X
	Potamogeton praelongus	White-stem pondweed	8	X
	Potamogeton pusillus	Small pondweed	7	X
	Potamogeton richardsonii	Clasping-leaf pondweed	5	X
	Potamogeton robbinsii	Fern pondweed	8	X
	Potamogeton spirillus	Spiral-fruited pondweed	8	X
	Potamogeton strictifolius	Stiff pondweed	8	X
	*Potamogeton vaseyi**	Vasey's pondweed	10	X
	Potamogeton zosteriformis	Flat-stem pondweed	6	I
	Sagittaria sp. (rosette)	Arrowhead rosette	N/A	X
	*Utricularia resupinata**	Small purple bladderwort	9	X
	Utricularia vulgaris	Common bladderwort	7	I
	Vallisneria americana	Wild celery	6	X
SE	*Eleocharis acicularis*	Needle spikerush	5	X
	Juncus pelocarpus	Brown-fruited rush	8	X
	Sagittaria cuneata	Arum-leaved arrowhead	7	I
	Sagittaria graminea	Grass-leaved arrowhead	9	I
FF	*Lemna turionifera*	Turion duckweed	2	I

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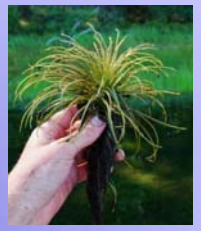
Submergent Plant Growth Forms

Isoetid
Turf Species



Elodeid
Leafy Plants

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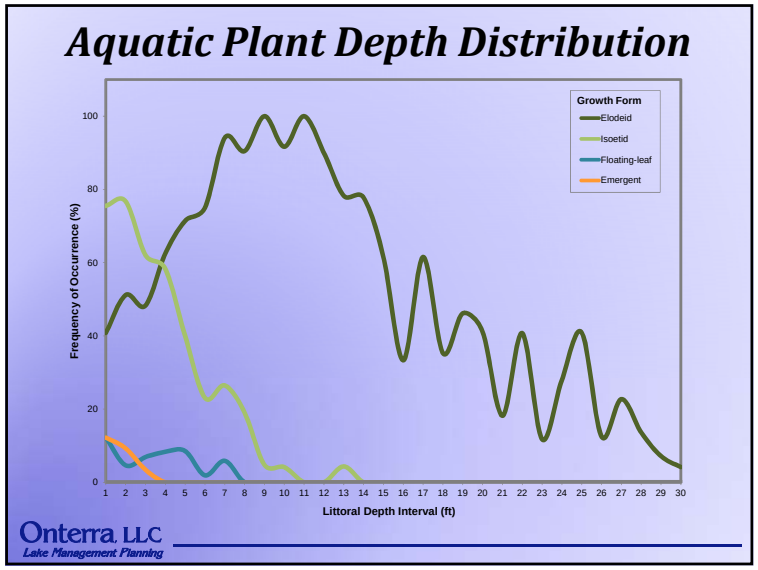
Lake Management Planning


Aquatic Plant Depth Distribution
Growth Form
Elodeid
Isoetid
Floating-leaf
Emergent
Frequency of Occurrence (%)
Littoral Depth Interval (ft)
Onterra LLC
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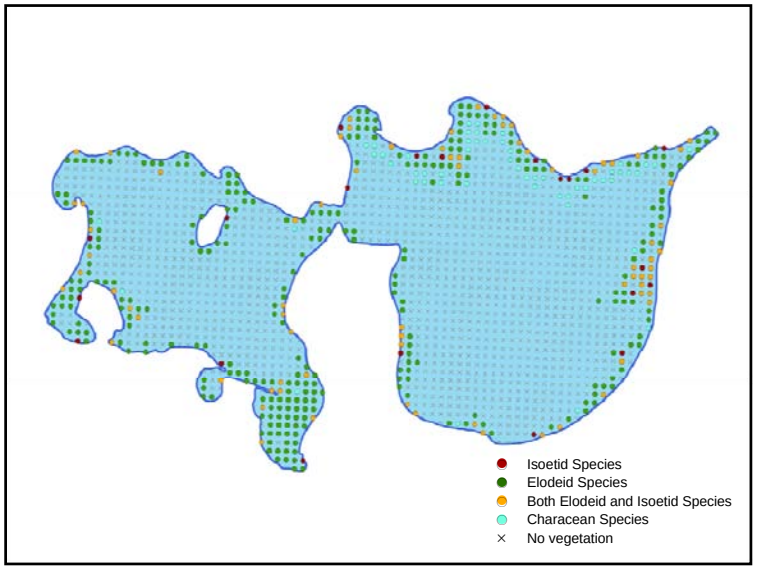
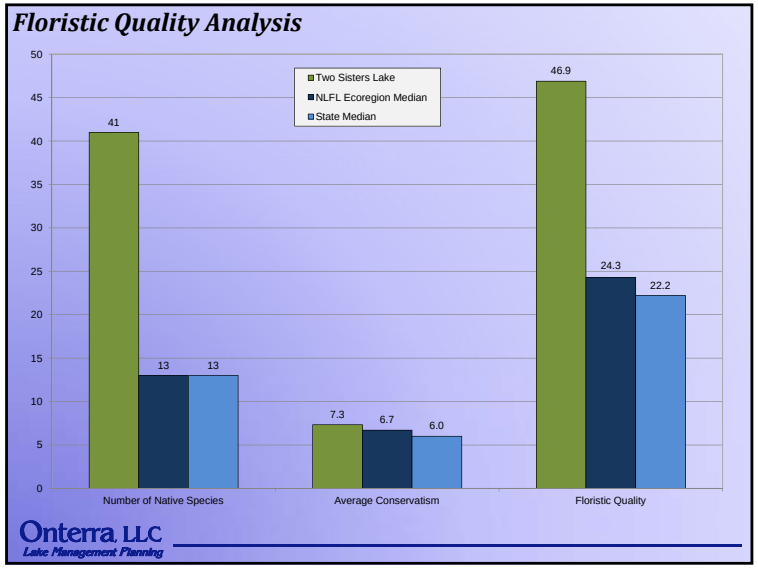
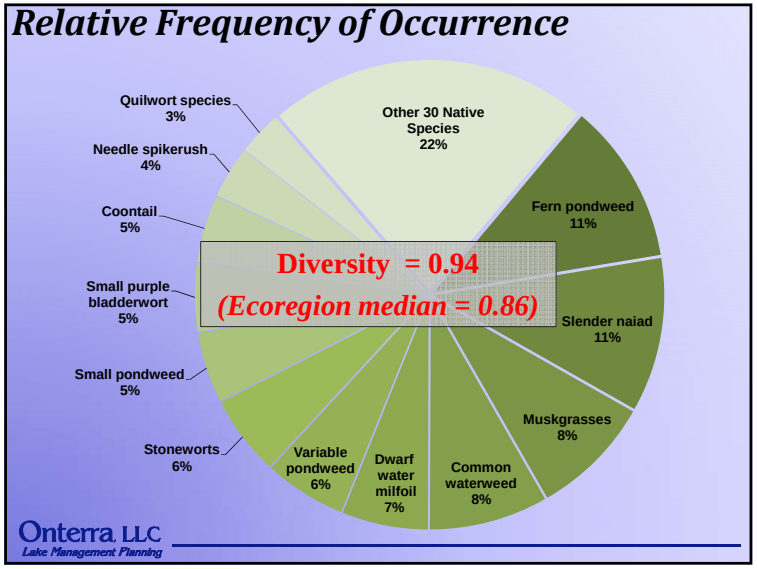

Isoetid Species
Elodeid Species
Both Elodeid and Isoetid Species
Characean Species
No vegetation


Floristic Quality Analysis
Two Sisters Lake
NLFL Ecoregion Median
State Median
41
13
13
7.3
6.7
6.0
46.9
24.3
22.2
Number of Native Species
Average Conservatism
Floristic Quality
Onterra LLC
Lake Management Planning


Relative Frequency of Occurrence
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Coontail 5%
Small purple bladderwort 5%
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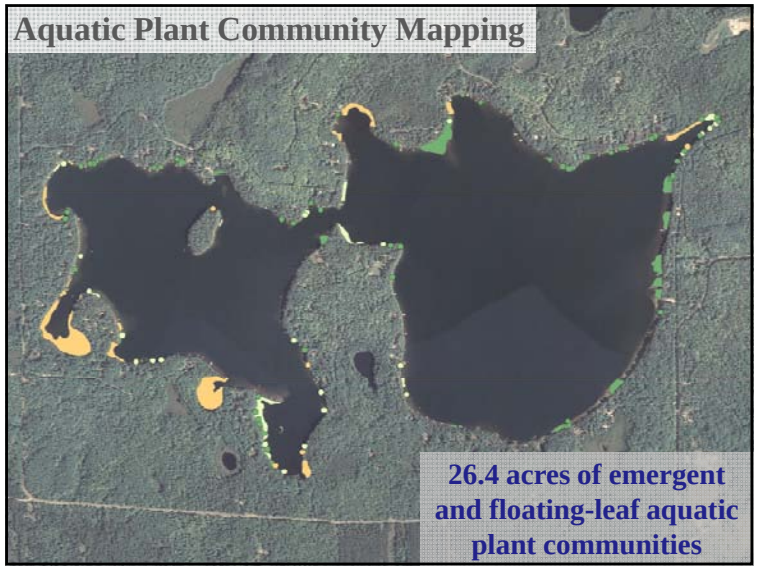
Onterra LLC
Lake Management Planning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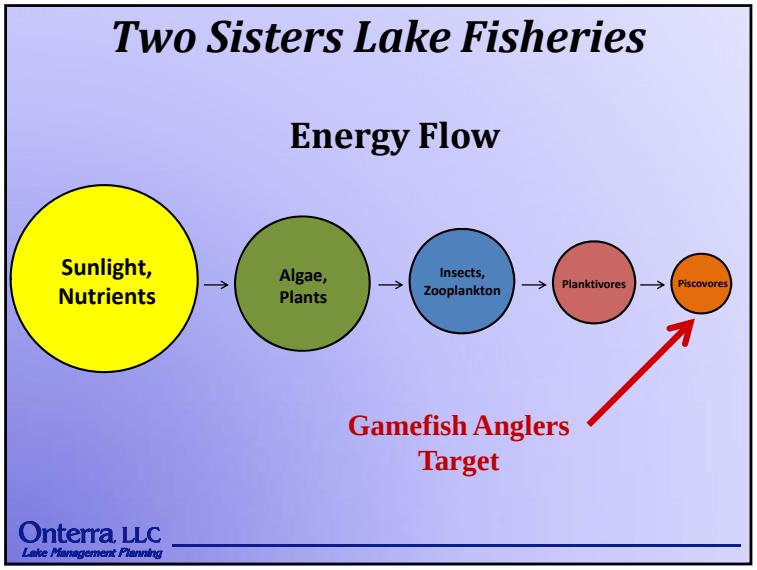
26.4 acres of emergent and floating-leaf aquatic plant communities


Two Sisters Lake Fisheries
Energy Flow
Sunlight, Nutrients
Algae, Plants
Insects, Zooplankton
Planktivores
Piscovores
Gamefish Anglers Target
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Two Sisters Lake Fisheries
Treaty of 1842
Treaty of 1837
Two Sisters Lake
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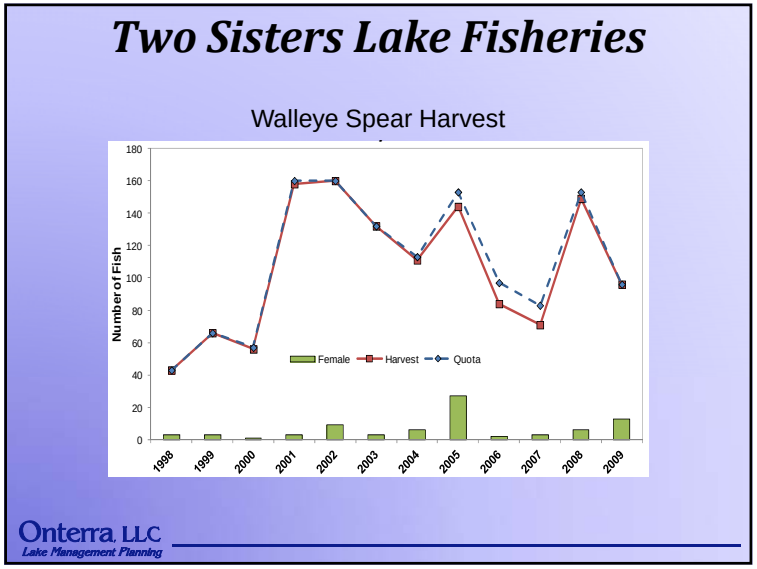
Two Sisters Lake Fisheries
Walleye Spear Harvest
Number of Fish
Female
Harvest
Quota
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
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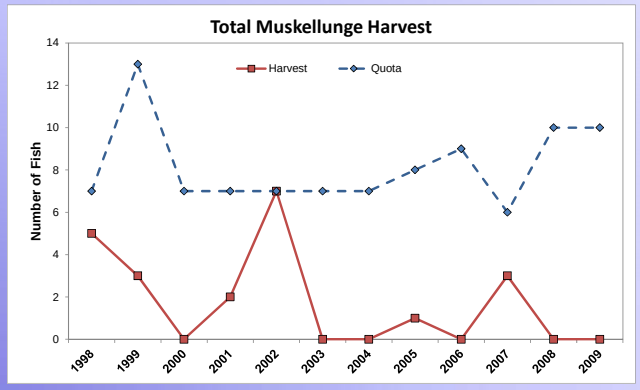
Two Sisters Lake Fisheries



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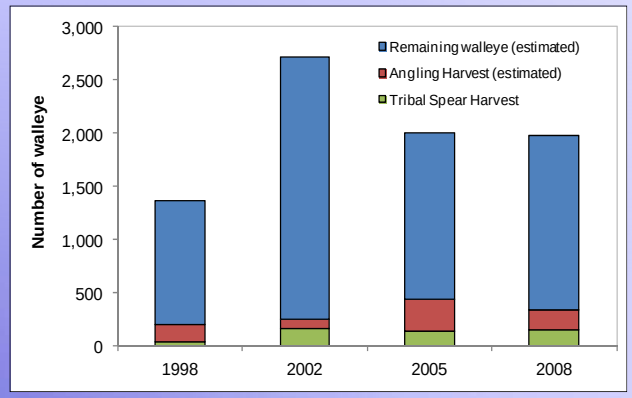
Two Sisters Lake Fisheries



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Conclusions

- Water quality is excellent
- Overall watershed is largely in healthy condition
  - Minimal phosphorus input; ecologically valuable landcover types present
  - Shoreline is mostly natural and undeveloped
- Aquatic plant community
  - Based on standard analysis, native community is of high quality
  - Lake has diverse plant community, and high species richness

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Thank You

Many of the graphics used in this presentation were supplied by:

Wisconsin Lakes Partnership

UWEX Extension

Wisconsin Dept. of Natural Resources

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Town of Newbold & Two Sisters Lake Property Owners Association

Two Sisters Lake
Management Planning Project
Wrap-up Meeting
August 4, 2012

Tim Hoyman, CLM
Onterra LLC
Lake Management Planning

Presentation Outline

- **Lake Management Planning Project Overview**
- **Study Results**
  - Water Quality
  - Watershed
  - Aquatic Plants
  - Fisheries
- **"Big Picture"**
- **Implementation Plan**

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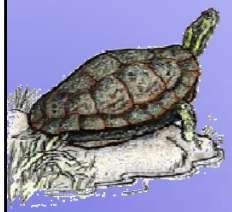
Study and Plan Goals

- Collect & Analyze Data
- Construct Long-Term & Useable Plan



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Overall Lake Health

- Excellent overall
  - Water quality
  - Watershed
  - Aquatic Plants
- Management Plan: Protection Mode

Wisconsin Ecoregions

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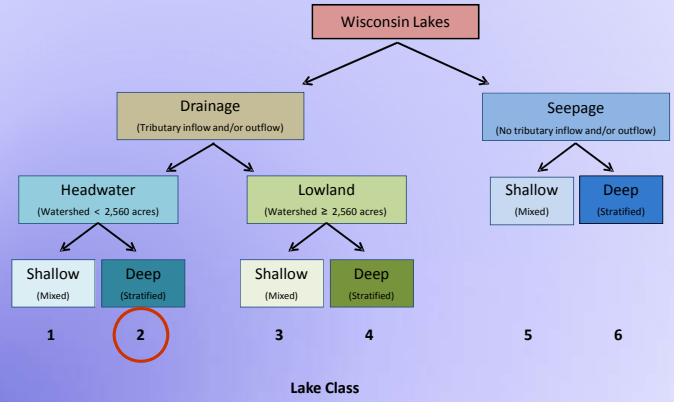
Wisconsin Lakes Classification



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Water Quality

- **Phosphorus (Limiting Plant Nutrient)**
  Nitrogen:Phosphorus = 31:1
- **Chlorophyll-*a* (Algal Abundance)**
  Very low algal abundance
- **Water Clarity (Secchi Disk)**
  High Water Clarity

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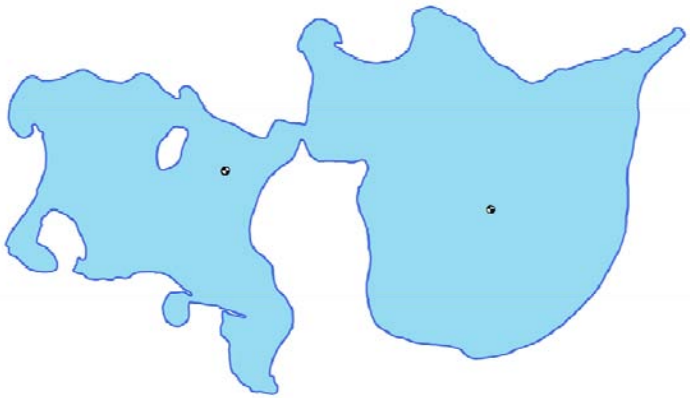

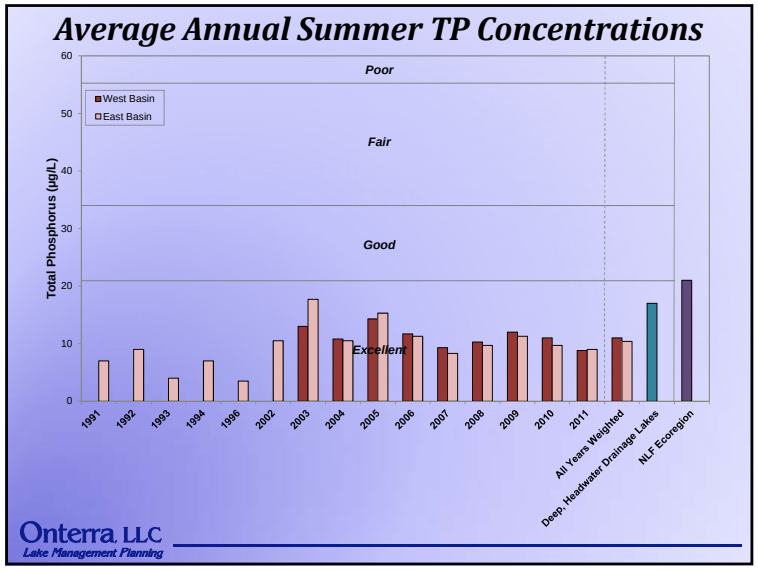
Average Annual Summer TP Concentrations
Total Phosphorus (µg/L)
West Basin
East Basin
Poor
Fair
Good
Excellent
1991 1992 1993 1994 1996 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 All Years Weighted Deep, Headwater Drainage Lakes NLF Ecoregion
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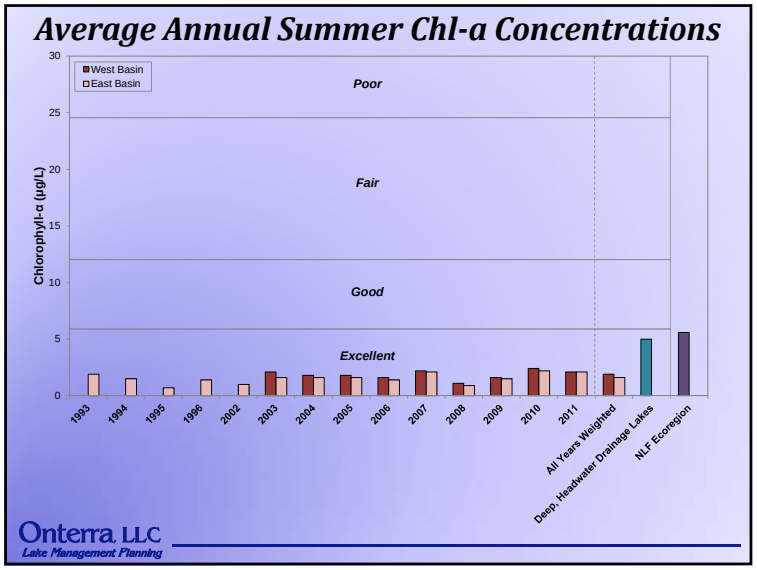
Average Annual Summer Chl-a Concentrations
Chlorophyll-a (µg/L)
West Basin
East Basin
Poor
Fair
Good
Excellent
1993 1994 1995 1996 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 All Years Weighted Deep, Headwater Drainage Lakes NLF Ecoregion
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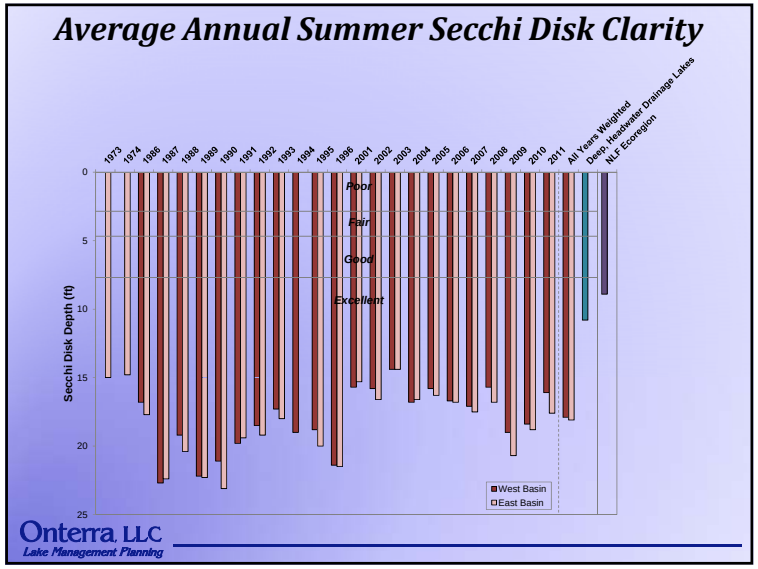
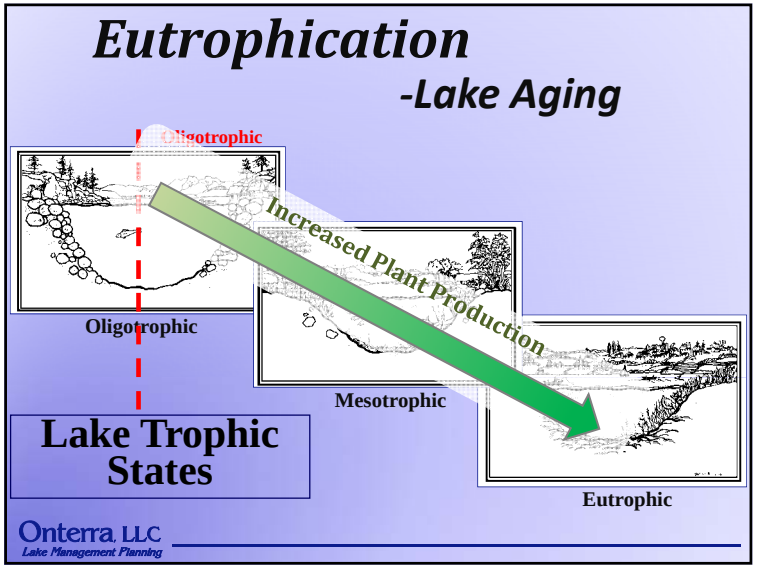

Average Annual Summer Secchi Disk Clarity
Secchi Disk Depth (ft)
1973 1974 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 All Years Weighted Deep, Headwater Drainage Lakes NLF Ecoregion
Poor
Fair
Good
Excellent
West Basin
East Basin
Onterra LLC
Lake Management Planning


Eutrophication
-Lake Aging
Oligotrophic
Increased Plant Production
Oligotrophic
Mesotrophic
Eutrophic
Lake Trophic States
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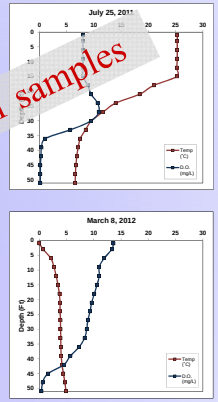
Lake Management Planning

Other Water Quality Results

- Lake thermally stratifies during summer and winter months
- No indication of low winter dissolved oxygen
- Alkalinity = 28.7 mg/L as $CaCO_3$ – indicates very little sensitivity to acid rain
- Low calcium concentrations (7.0 mg/L)
  - Not suitable for zebra mussel establishment

No veligers observed in 2011 samples



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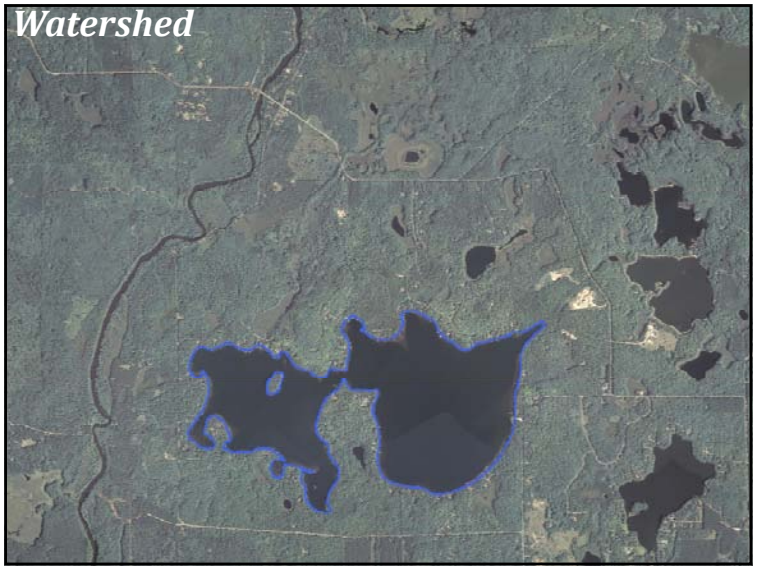
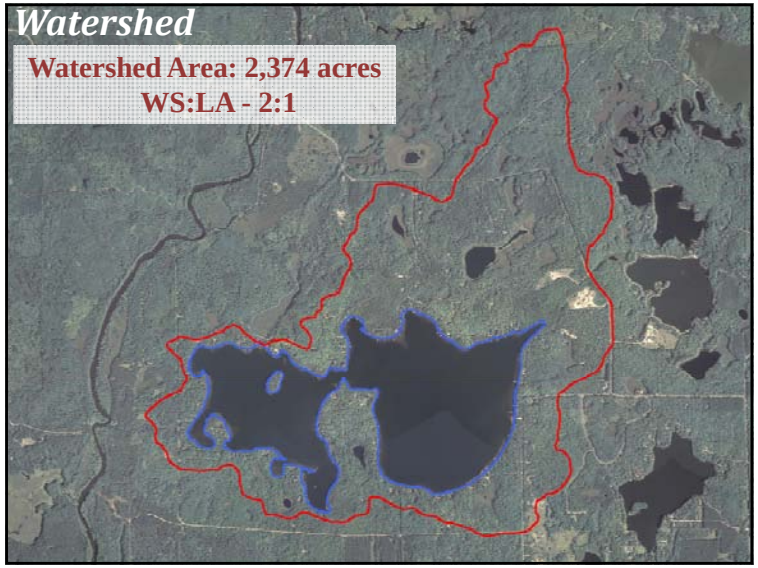
Watershed



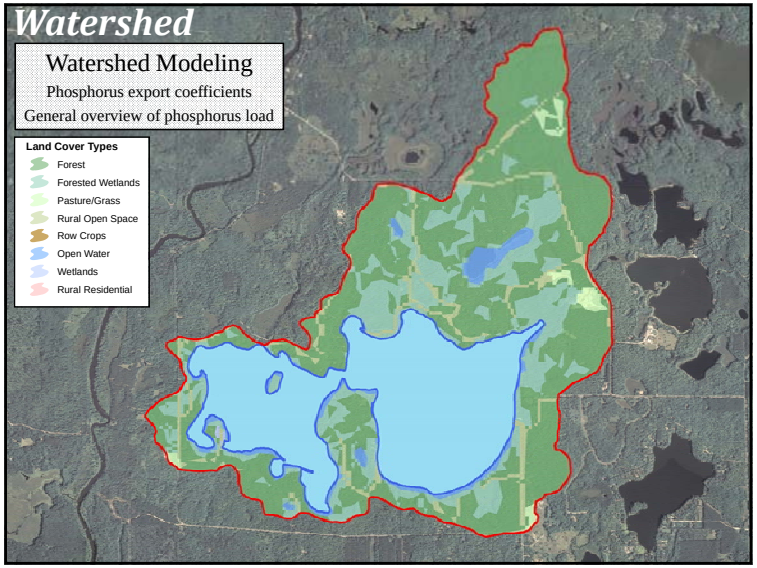
Watershed

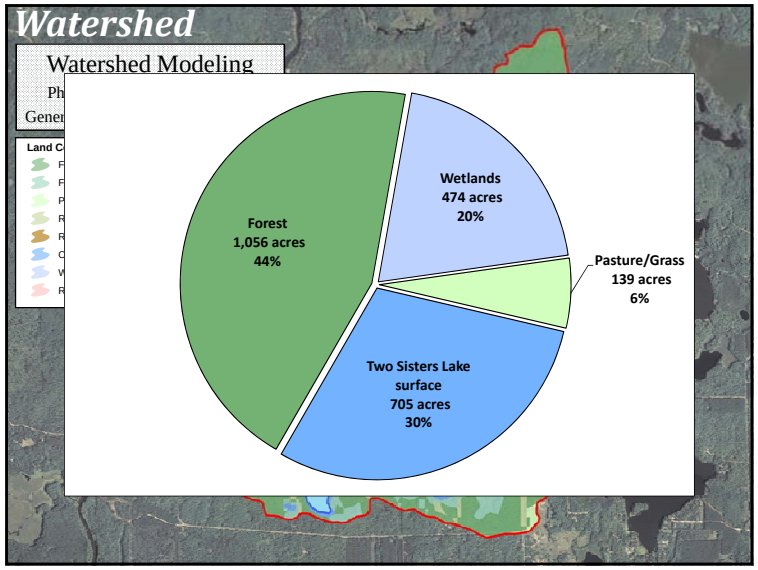
Watershed Area: 2,374 acres
WS:LA - 2:1

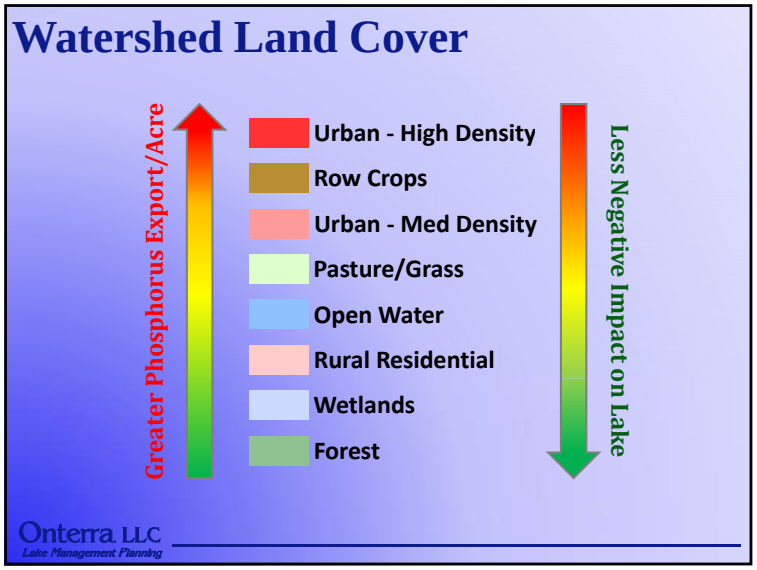


Watershed

Watershed Modeling
Phosphorus export coefficients
General overview of phosphorus load




Watershed
Watershed Modeling
Forest
1,056 acres
44%
Wetlands
474 acres
20%
Pasture/Grass
139 acres
6%
Two Sisters Lake
surface
705 acres
30%


Watershed Land Cover
Greater Phosphorus Export/Acre
Urban - High Density
Row Crops
Urban - Med Density
Pasture/Grass
Open Water
Rural Residential
Wetlands
Forest
Less Negative Impact on Lake
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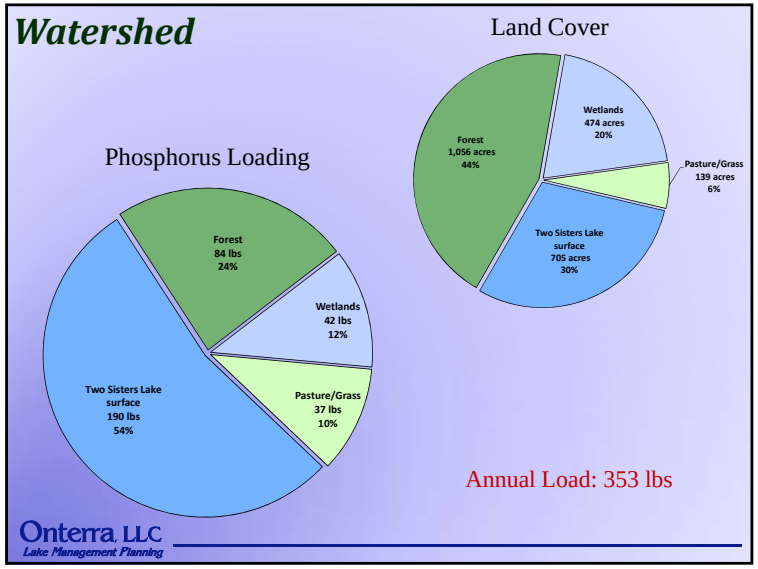
Lake Management Planning


Watershed
Land Cover
Forest
1,056 acres
44%
Wetlands
474 acres
20%
Pasture/Grass
139 acres
6%
Two Sisters Lake
surface
705 acres
30%
Phosphorus Loading
Forest
84 lbs
24%
Wetlands
42 lbs
12%
Pasture/Grass
37 lbs
10%
Two Sisters Lake
surface
190 lbs
54%
Annual Load: 353 lbs
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Shoreland Assessment
Shoreland area is important for buffering runoff and provides valuable habitat for aquatic and terrestrial wildlife.
It does not look at lake shoreline on a property-by-property basis.
Assessment ranks shoreland area from shoreline back 35 feet
Urbanized
Natural
Range
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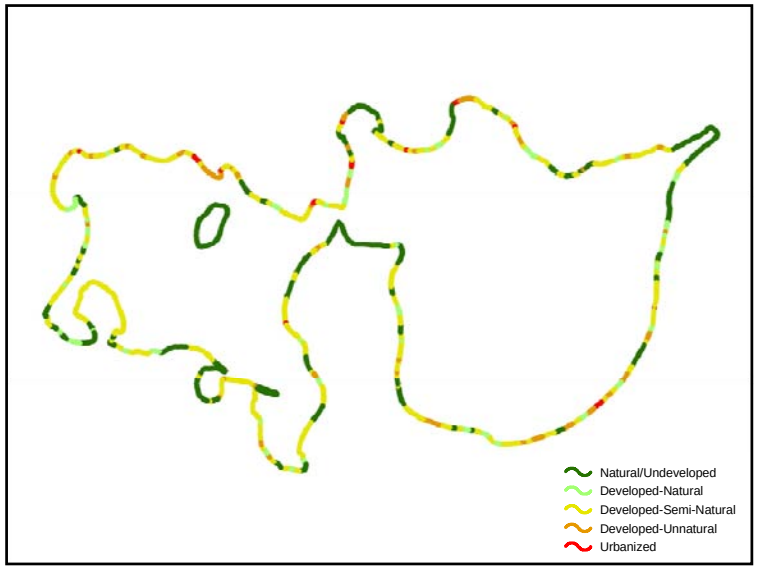
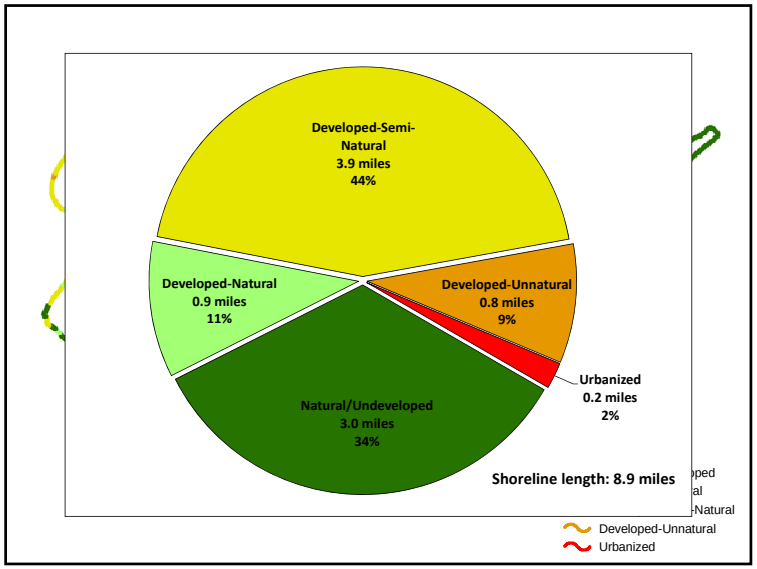
Lake Management Planning





Aquatic Plant Surveys

- Concerned with both native and non-native plants
- Multiple surveys used in assessment
  - Curly-leaf pondweed survey
  - Point-intercept survey
    - Systematic sampling method
    - Can compare lakes within same ecoregion
  - Plant community mapping
    - Accurately map floating-leaf & emergent communities
    - May compare to future surveys

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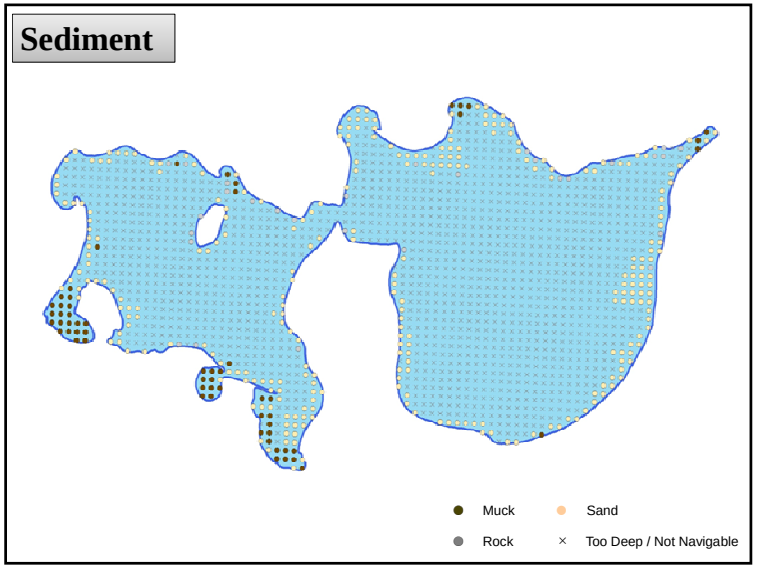
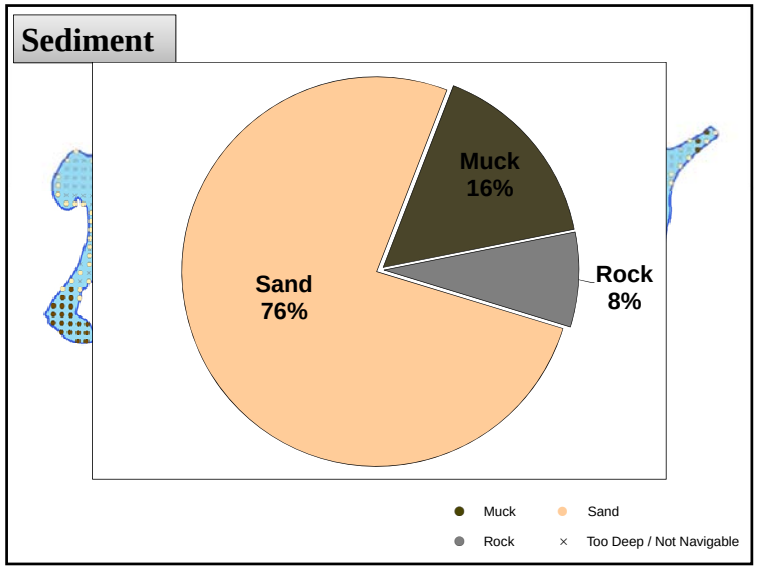
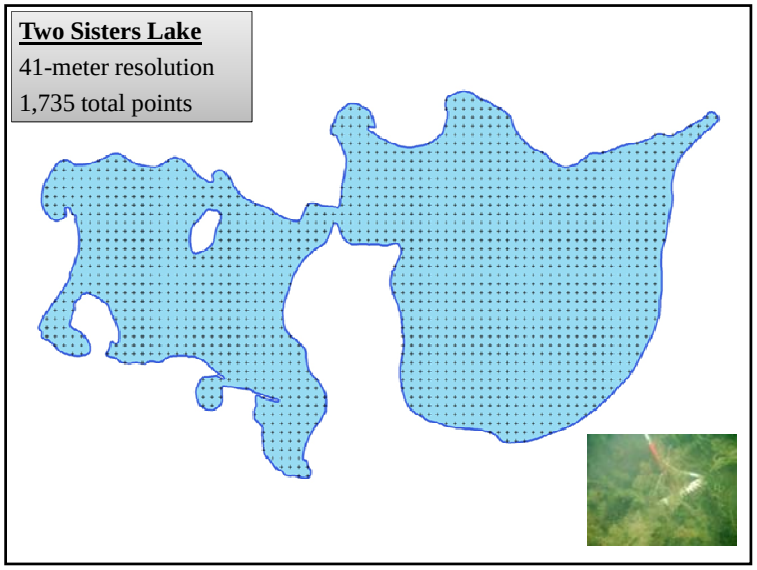
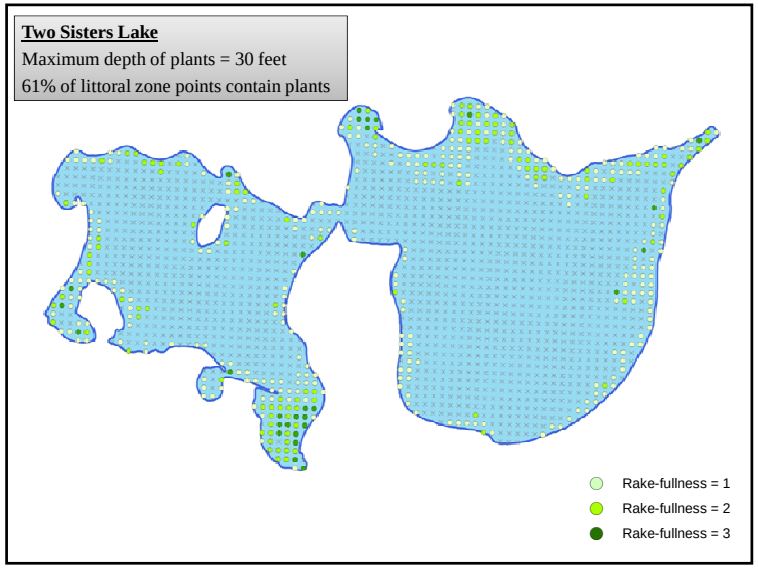
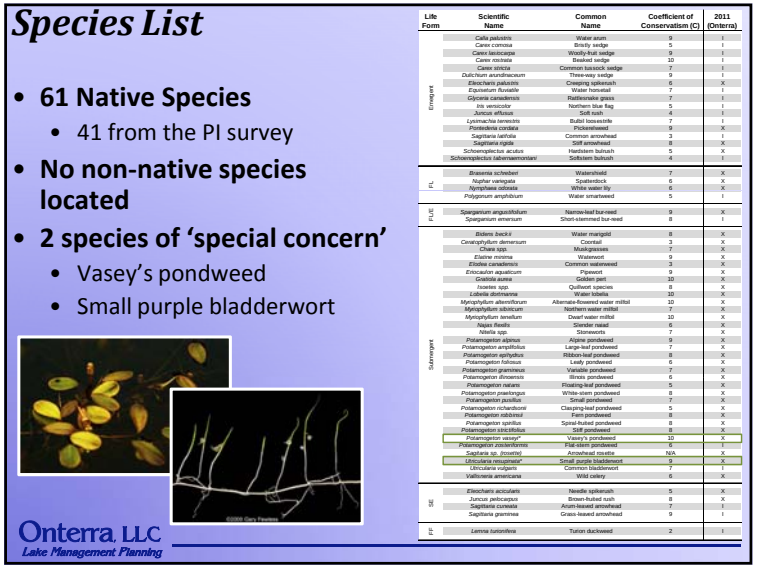



Sediment
Muck
16%
Sand
76%
Rock
8%
Muck
Sand
Rock
Too Deep / Not Navigable


Two Sisters Lake
41-meter resolution
1,735 total points


Two Sisters Lake
Maximum depth of plants = 30 feet
61% of littoral zone points contain plants
Rake-fullness = 1
Rake-fullness = 2
Rake-fullness = 3


Species List
61 Native Species
41 from the PI survey
No non-native species located
2 species of 'special concern'
Vasey's pondweed
Small purple bladderwort
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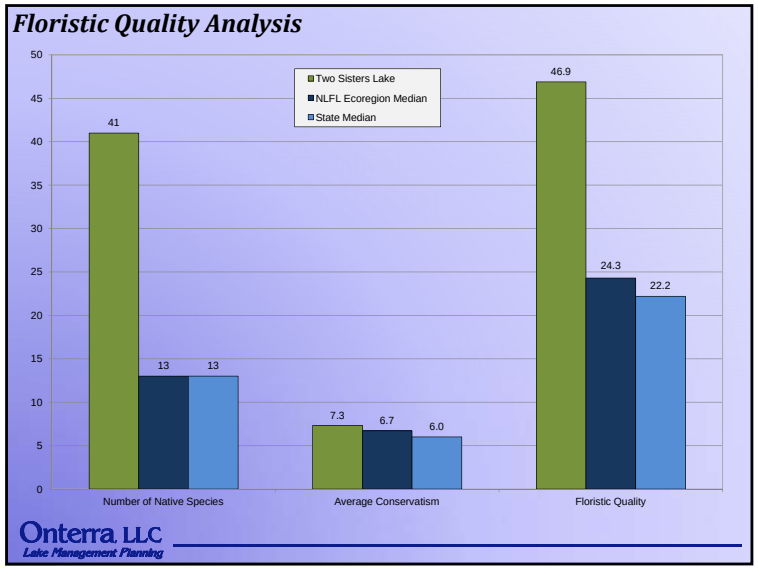
Lake Management Planning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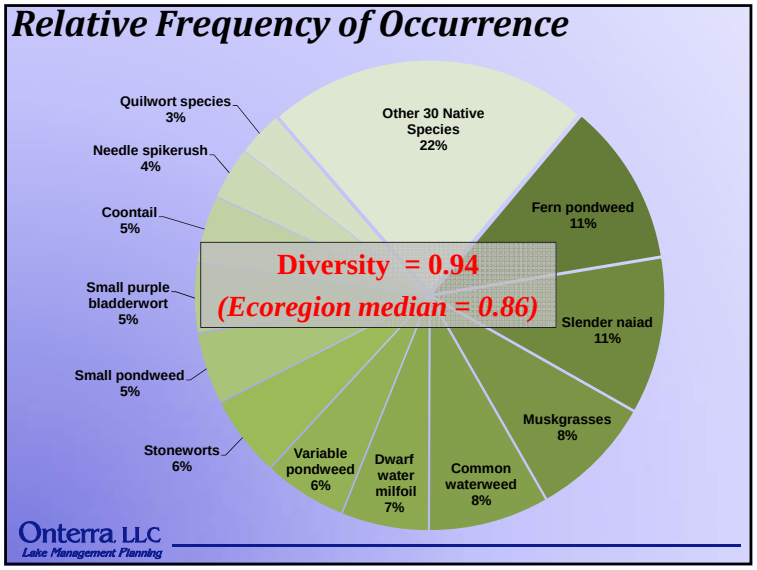
Onterra LLC
Lake Management Planning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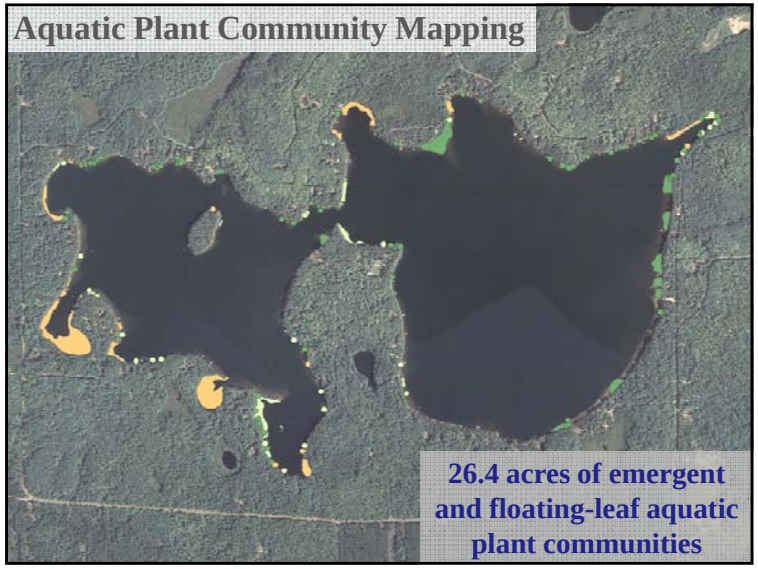
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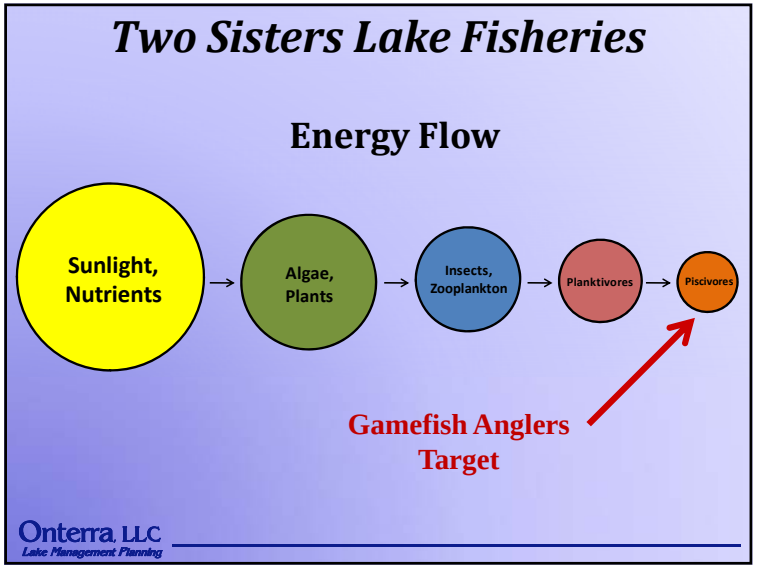
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Gamefish Anglers Target
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Two Sisters Lake Fisheries

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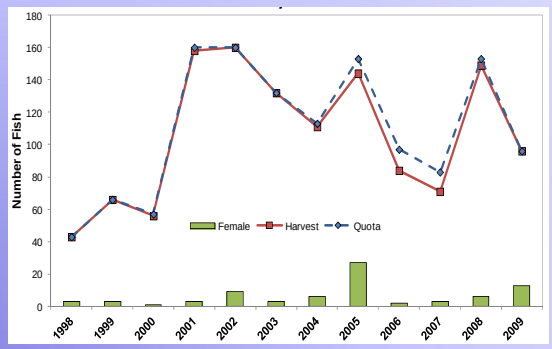
Two Sisters Lake Fisheries

Walleye Spear Harvest



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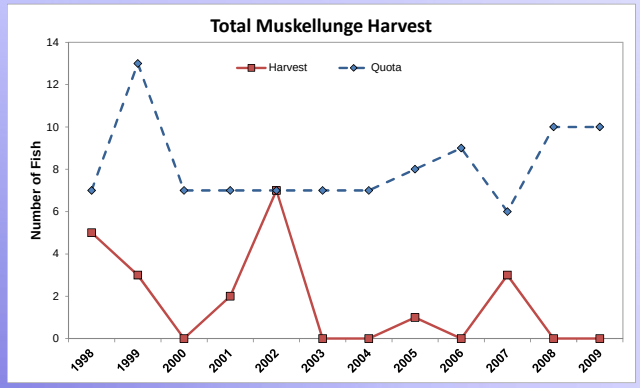
Two Sisters Lake Fisheries



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- Aquatic plant community
  - Based on standard analysis, native community is of high quality
  - Lake has diverse plant community, and high species richness

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Management Goal 1:
Develop and Maintain Partnerships with Cognizant Organizations

Management Actions

1. Identify potential partners.
2. Plan method to keep contact with partners.

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Management Goal 2:
Develop Succession Plan

Management Actions

1. Review by-laws regarding who can & cannot be board members.
2. Identify prospective board members who cannot/will not be on the board.

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Management Goal 3:
Foster a Quality Fishery

Management Actions

1. Understand fishery.
2. Move forward with fishery plan as developed by WDNR & association.

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Management Goal 4:
Increase Understanding of Shoreland Zoning Impacts on Two Sisters Lake

Management Actions

1. Assemble shoreland zoning regulations for Oneida County.
2. Provide distilled information to stakeholders.
3. Make contact with large-tract property owners to discuss their options.
4. Board of Directors develop policy for shoreland violations.

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Management Goal 5: Maintain Water Quality

Management Actions

1. Continue water quality monitoring.
2. Utilize Citizens Lake Monitoring Network (CLMN).

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Management Goal 6: Maintain Water Level

Management Actions

1. Continue Contingency Fund

Onterra LLC Lake Management Planning

Management Goal 7: Prevent Introduction of Aquatic Invasive Species

Management Actions

1. Continue Clean Boats/Clean Waters inspections.
2. Monitor lake through shoreline inspections.
3. Investigate mandatory-use watercraft washing station and other preventative alternatives.
4. Continue education.
5. Maintain strong relationship with Oneida County AIS Coordinator.

Onterra LLC Lake Management Planning

Management Goal 8: Keep Stakeholders Informed

Management Actions

1. Continue newsletter.
2. Create website.
3. Continue email notifications.

Onterra LLC Lake Management Planning

B

APPENDIX B

Stakeholder Survey Response Charts and Comments

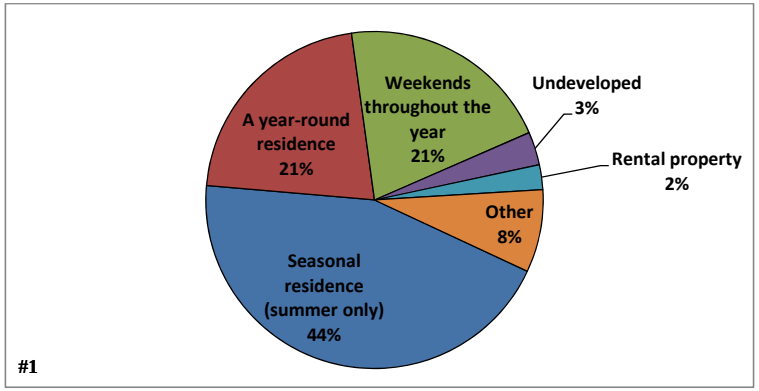
Returned Surveys	124
Sent Surveys	180
Response Rate (%)	68.9

TWO SISTERS LAKE PROPERTY

#1 How is your property on Two Sisters Lake utilized?

	Total	%	Average Use*
Seasonal residence (summer only)	56	*44.4*	93
A year-round residence	27	*21.4*	289
Weekends throughout the year	26	*20.6*	68
Undeveloped	4	*3.2*	0
Rental property	3	*2.4*	213
Other	10	*7.9*	140
	126	*100.0*	

**Average use (days per year) for property use categories as determined by Question #2 response*

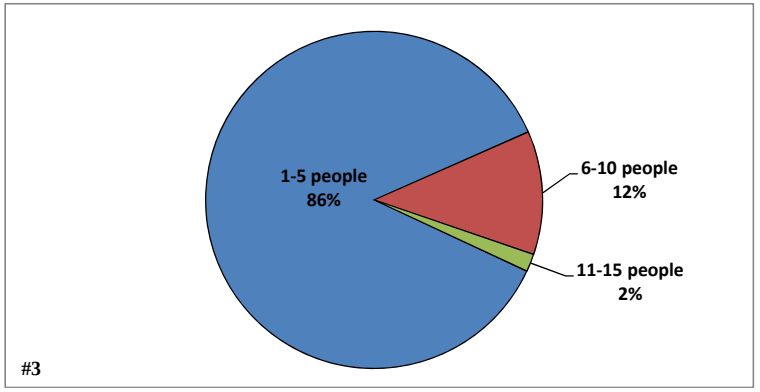


#2 How many days each year is your property used by you or others?

Answered Question	114
Average	131.0
Standard deviation	116.1

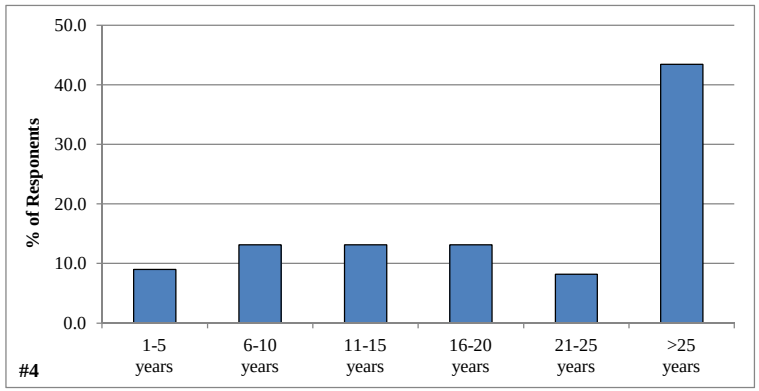
#3 Over a 12 month period, what is the average number of people that use your property in a typical week?

Answered Question	118
Average	3.5
Standard deviation	2.1
Responses with 1-5 people	102
Responses with 6-10 people	14
Responses with 11-15 people	2



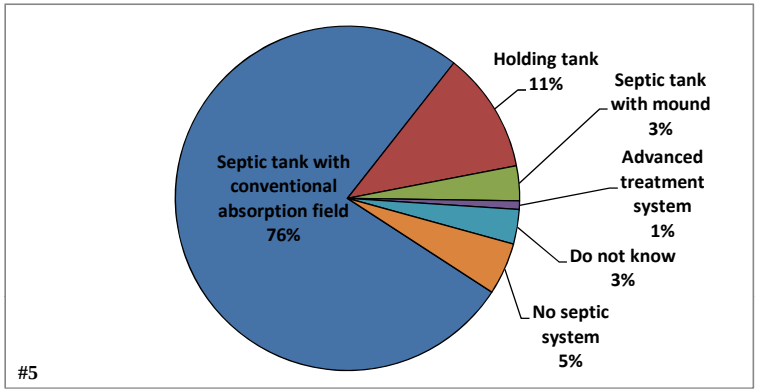
#4 How long have you owned your property on Two Sisters Lake?

	Total	%
1-5 years	11	*9.0*
6-10 years	16	*13.1*
11-15 years	16	*13.1*
16-20 years	16	*13.1*
21-25 years	10	*8.2*
>25 years	53	*43.4*
	122	*100.0*



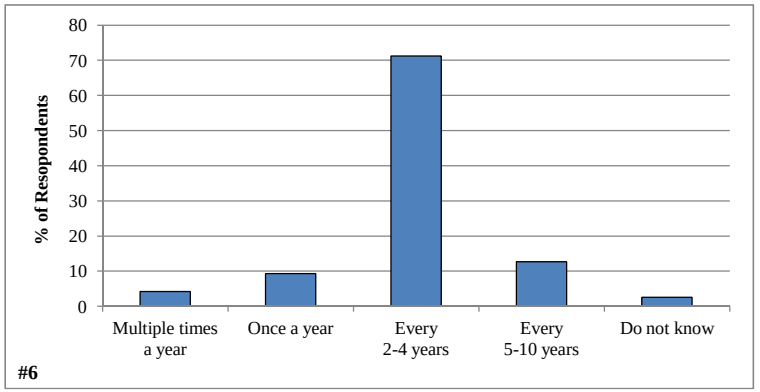
#5 What type of septic system does your property utilize?

	Total	%
Septic tank with conventional absorption field	94	*76.4*
Holding tank	14	*11.4*
Septic tank with mound	4	*3.3*
Advanced treatment system	1	*0.8*
Do not know	4	*3.3*
No septic system - *Go to Question #7*	6	*4.9*
	123	*100.0*



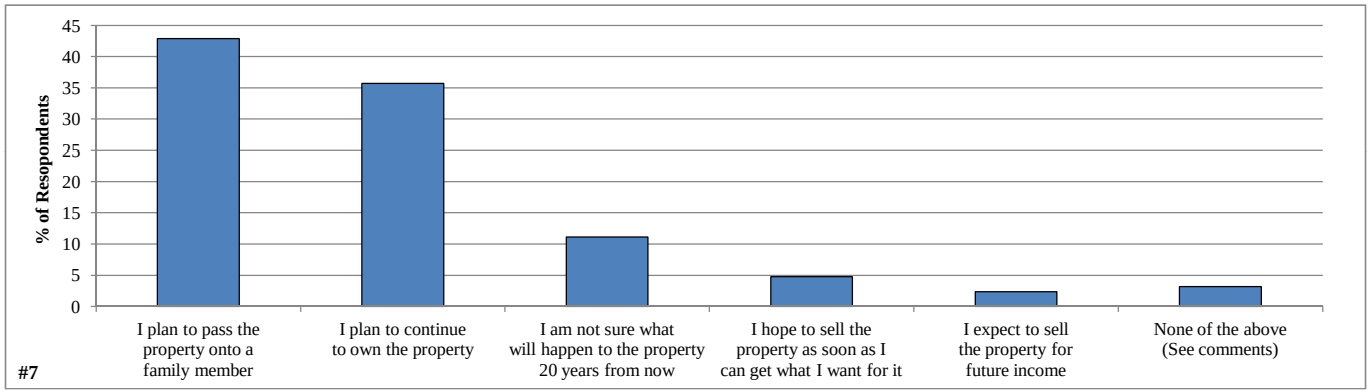
#6 If you have a septic system or holding tank, how often is it pumped?

	Total	%
Multiple times a year	5	*4.2*
Once a year	11	*9.3*
Every 2-4 years	84	*71.2*
Every 5-10 years	15	*12.7*
Do not know	3	*2.5*
	118	*100.0*



#7 Looking 20 years into the future, what plans, if any, do you have for your property?

	Total	%
I plan to pass the property onto a family member	54	*42.9*
I plan to continue to own the property	45	*35.7*
I am not sure what will happen to the property 20 years from now	14	*11.1*
I hope to sell the property as soon as I can get what I want for it	6	*4.8*
I expect to sell the property for future income	3	*2.4*
None of the above (*See comments*)	4	*3.2*
	126	*100.0*



RECREATIONAL USE ON TWO SISTERS LAKE

#8 How many years ago did you first visit Two Sisters Lake?

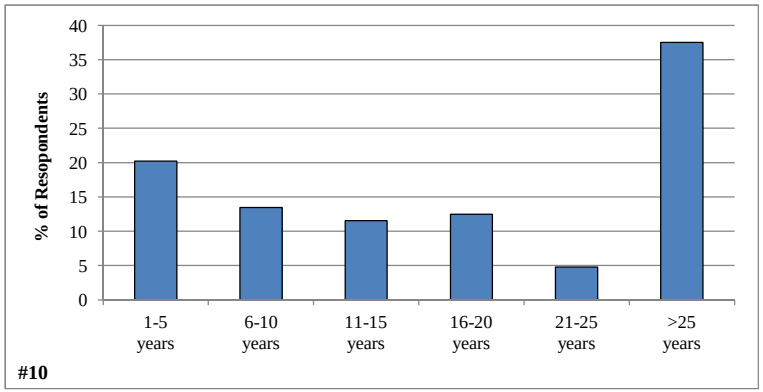
Answered Question	118
Average	32.1
Standard deviation	18.0

#9 Have you personally fished on Two Sisters Lake?

	Total	%
Yes	106	*89.1*
No - *Go to Question #14*	13	*10.9*
	119	*100.0*

#10 For how many years have you fished Two Sisters Lake?

	Total	%
1-5 years	21	*20.2*
6-10 years	14	*13.5*
11-15 years	12	*11.5*
16-20 years	13	*12.5*
21-25 years	5	*4.8*
>25 years	39	*37.5*
	104	*100.0*

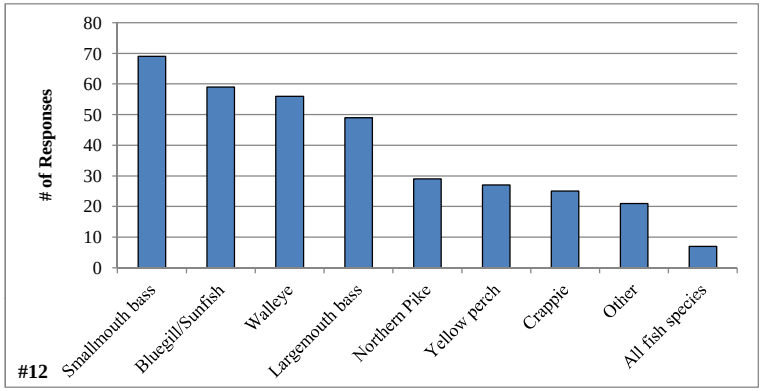


#11 How would you describe the current quality of fishing on Two Sisters Lake?

	Total	%
Very Poor	3	*3.3*
Poor	14	*15.4*
Fair	40	*44.0*
Good	31	*34.1*
Excellent	3	*3.3*
Unsure	14	*15.4*
	91	*100.0*

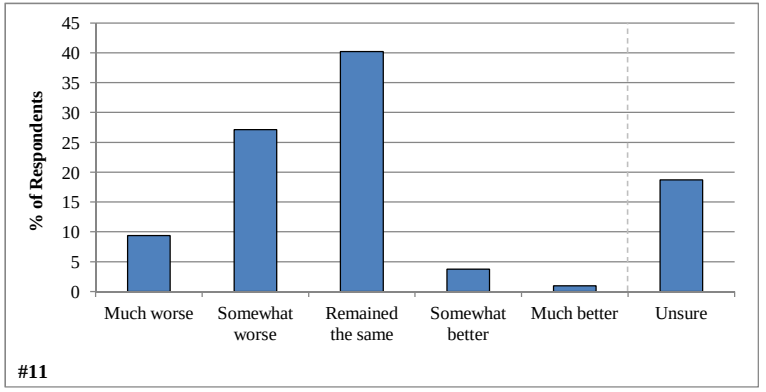
#12 What species of fish do you typically catch on Two Sisters Lake?

	Total
Smallmouth bass	69
Bluegill/Sunfish	59
Walleye	56
Largemouth bass	49
Northern Pike	29
Yellow perch	27
Crappie	25
Other	21
All fish species	7



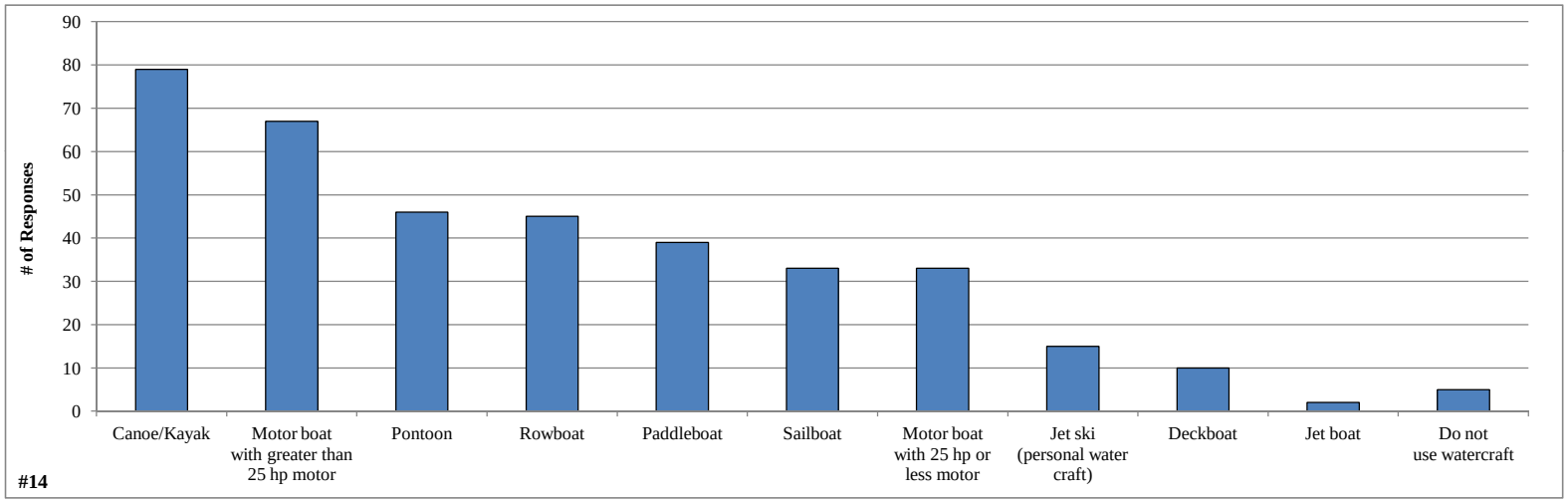
#13 How has the quality of fishing changed on Two Sisters Lake since you have started fishing the lake?

	Total	%
Much worse	10	*9.3*
Somewhat worse	29	*27.1*
Remained the Same	43	*40.2*
Somewhat better	4	*3.7*
Much better	1	*0.9*
Unsure	20	*18.7*
	107	*100.0*



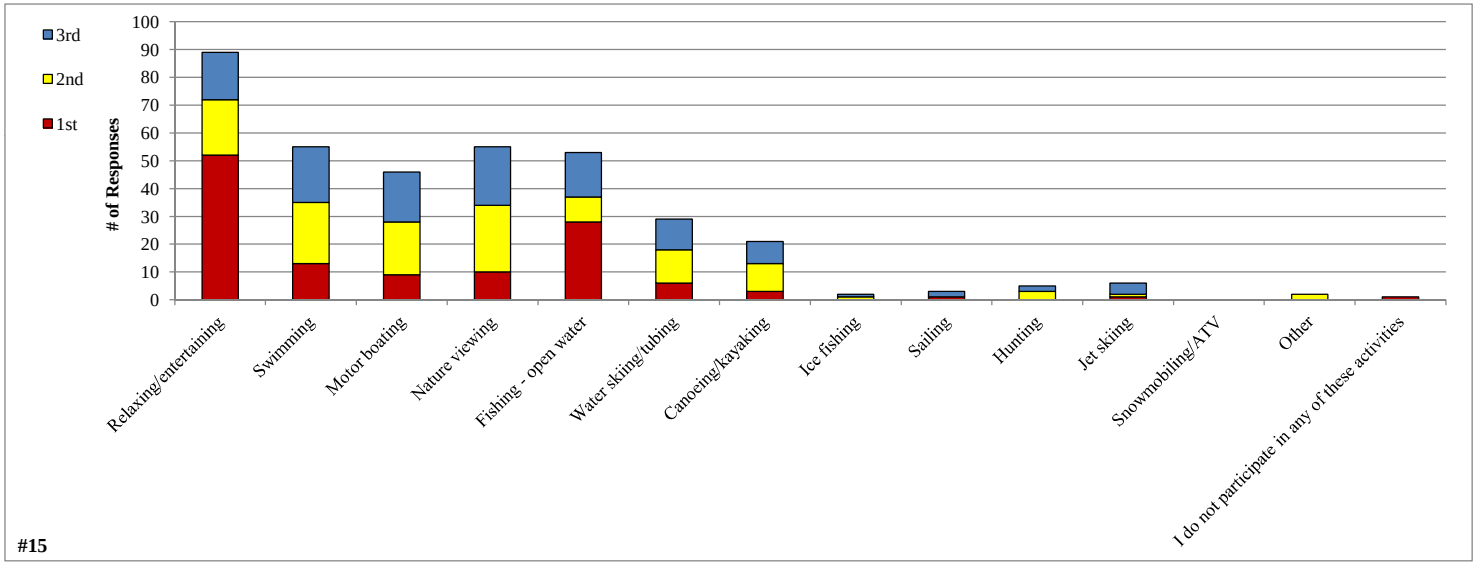
#14 What types of watercraft do you currently use on Two Sisters Lake?

	Total
Canoe/Kayak	79
Motor boat with greater than 25 hp motor	67
Pontoon	46
Rowboat	45
Paddleboat	39
Sailboat	33
Motor boat with 25 hp or less motor	33
Jet ski (personal water craft)	15
Deckboat	10
Jet boat	2
Do not use watercraft	5



#15 Please rank up to five activities that you participate in on or near Two Sisters Lake?

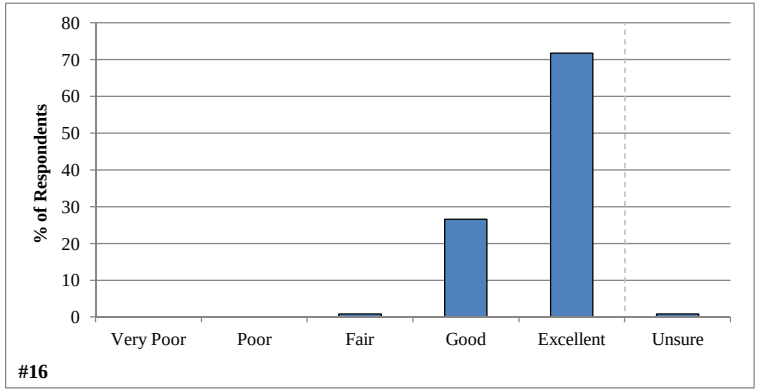
	1st	2nd	3rd	4th	5th	*% ranked*
Relaxing/entertaining	52	20	17	11	6	*18.0*
Swimming	13	22	20	20	12	*14.8*
Motor boating	9	19	18	19	10	*12.7*
Nature viewing	10	24	21	12	7	*12.6*
Fishing - open water	28	9	16	10	9	*12.2*
Water skiing/tubing	6	12	11	9	16	*9.2*
Canoeing/kayaking	3	10	8	15	17	*9.0*
Ice fishing	0	1	1	9	7	*3.1*
Sailing	1	0	2	4	8	*2.5*
Hunting	0	3	2	3	3	*1.9*
Jet skiing	1	1	4	3	1	*1.7*
Snowmobiling/ATV	0	0	0	1	5	*1.0*
Other	0	2	0	1	4	*1.2*
I do not participate in any of these activities	1	0	0	0	0	*0.2*
	124	123	120	117	105	*100.0*



TWO SISTERS LAKE CURRENT AND HISTORIC CONDITION, HEALTH AND MANAGEMENT

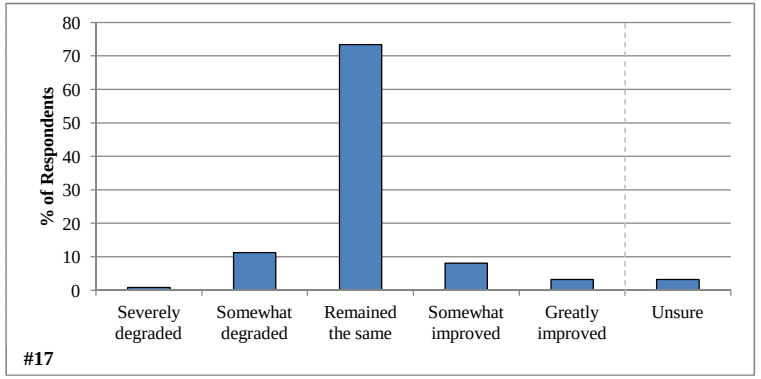
#16 How would you describe the current water quality of Two Sisters Lake?

	Total	%
Very Poor	0	*0.0*
Poor	0	*0.0*
Fair	1	*0.8*
Good	33	*26.6*
Excellent	89	*71.8*
Unsure	1	*0.8*
	124	*100.0*



#17 How has the water quality changed in Two Sisters Lake since you visited the lake?

	Total	%
Severely degraded	1	*0.8*
Somewhat degraded	14	*11.3*
Remained the same	91	*73.4*
Somewhat improved	10	*8.1*
Greatly improved	4	*3.2*
Unsure	4	*3.2*
	124	*100.0*



#18 Do you have a lawn on your property?

	Total	%
Yes	67	*54.0*
No - *Go to Question #23*	57	*46.0*
	124	*100.0*

#19 Is there a natural buffer between your lawn and the lake?

	Total	%
Yes	63	*88.7*
No	8	*11.3*
	71	*100.0*

#20 How do you water your lawn?

	Total	%
Well water	9	*13.2*
Lake water	10	*14.7*
Do not water lawn	48	*70.6*
Other	1	*1.5*
	68	*100.0*

#21 Do you fertilize your lawn?

	Total	%
Yes	21	*30.0*
No - *Go to Question # 23*	49	*70.0*
	70	*100.0*

#22 If you fertilize your lawn, do you use phosphorus-free fertilizer?

	Total	%
Yes	15	*22.1*
No	5	*7.4*
Unsure	2	*2.9*
	22	*32.4*

#23 Have you ever heard of aquatic invasive species?

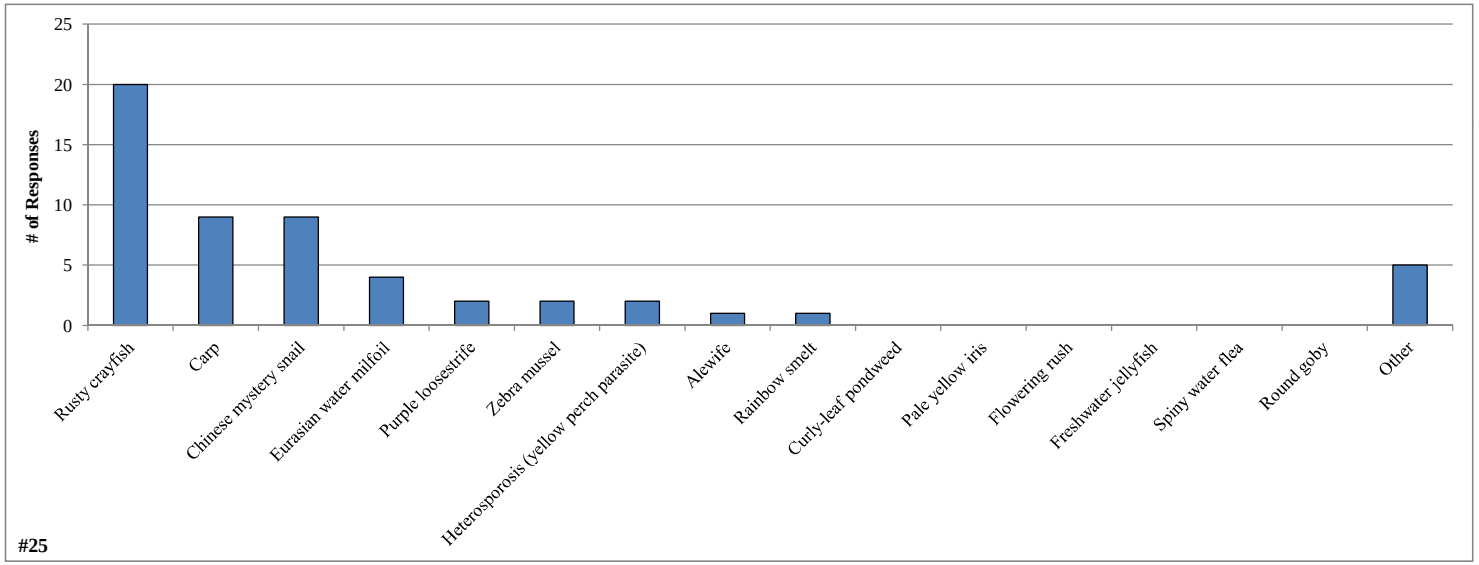
	Total	%
Yes	117	*100.0*
No - *Go to Question #27*	0	*0.0*
	117	*100.0*

#24 Are you aware of aquatic invasive species in Two Sisters Lake?

	Total	%
Yes	28	*24.8*
No - *Go to Question #26*	85	*75.2*
	113	*100.0*

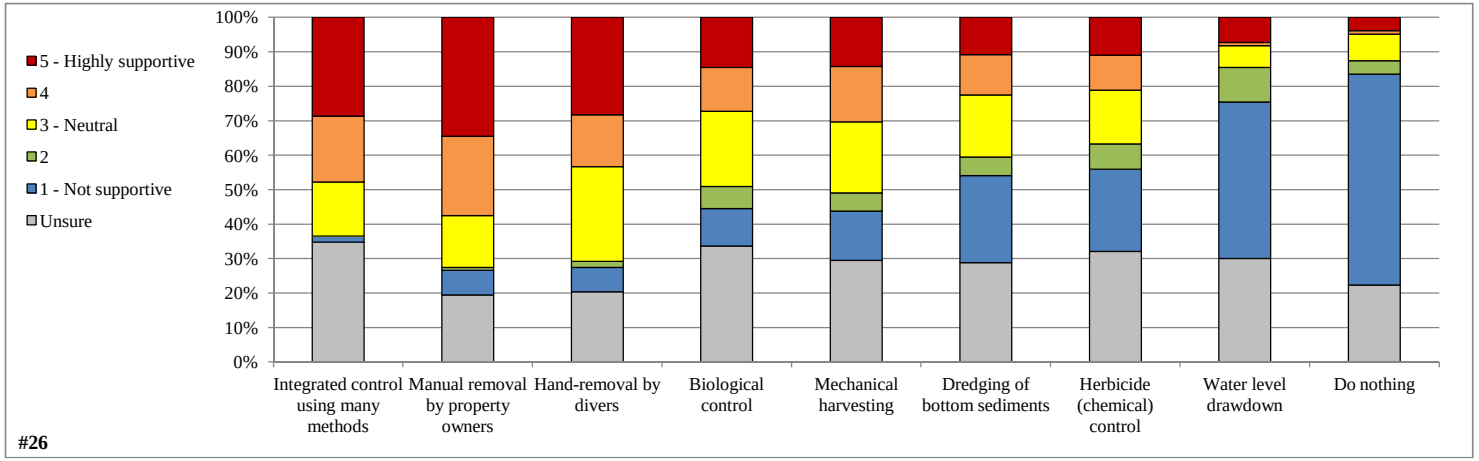
#25 Which aquatic invasive species are you aware of in Two Sisters Lake?

	Total
Rusty crayfish	20
Carp	9
Chinese mystery snail	9
Eurasian water milfoil	4
Purple loosestrife	2
Zebra mussel	2
Heterosporosis (yellow perch parasite)	2
Alewife	1
Rainbow smelt	1
Curly-leaf pondweed	0
Pale yellow iris	0
Flowering rush	0
Freshwater jellyfish	0
Spiny water flea	0
Round goby	0
Other	5



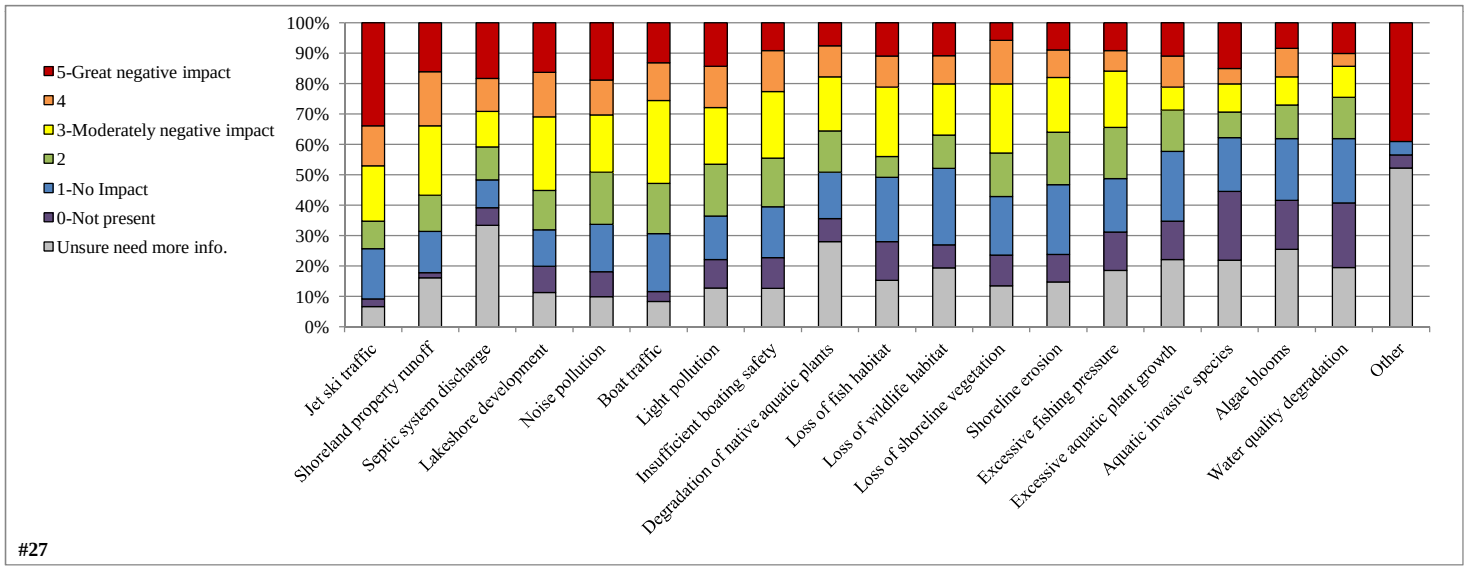
#26 Aquatic invasive species can be controlled using many techniques. What is your level of support for the responsible use of the following aquatic invasive plant control techniques on Two Sisters Lake?

	1 - Not supportive	2	3 - Neutral	4	5 - Highly supportive	Unsure	Total	Average
Integrated control using many methods	2	0	18	22	33	40	*75*	*4.1*
Manual removal by property owners	8	1	17	26	39	22	*91*	*4.0*
Hand-removal by divers	8	2	31	17	32	23	*90*	*3.7*
Biological control	12	7	24	14	16	37	*73*	*3.2*
Mechanical harvesting	16	6	23	18	16	33	*79*	*3.2*
Dredging of bottom sediments	28	6	20	13	12	32	*79*	*2.7*
Herbicide (chemical) control	26	8	17	11	12	35	*74*	*2.7*
Water level drawdown	50	11	7	1	8	33	*77*	*1.8*
Do nothing	63	4	8	1	4	23	*80*	*1.5*



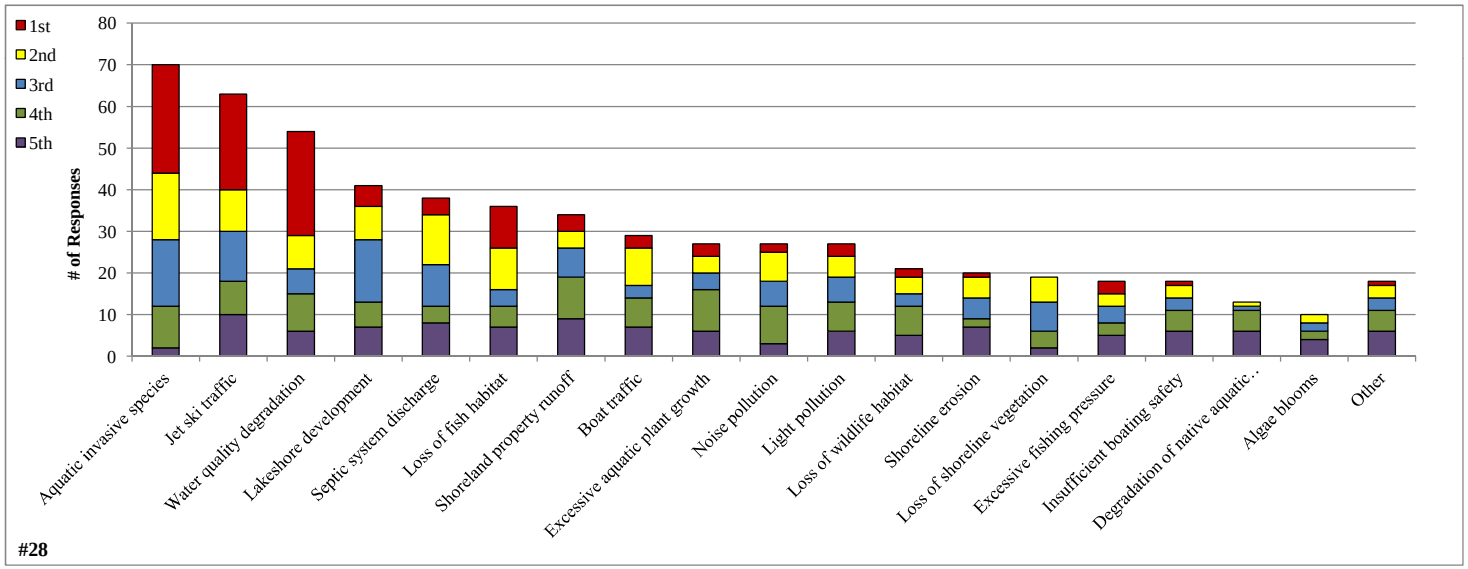
#27 Below is a list of possible impacts to Wisconsin lakes. To what level do you believe each of the following factors may be negatively impacting Two Sisters Lake?

	0-Not present	1-No Impact	2	3-Moderately negative impact	4	5-Great negative impact	Unsure need more info.	*Total*	*Average*
Jet ski traffic	3	20	11	22	16	41	8	*110*	*3.3*
Shoreland property runoff	2	16	14	27	21	19	19	*97*	*3.1*
Septic system discharge	7	11	13	14	13	22	40	*73*	*3.0*
Lakeshore development	10	14	15	28	17	19	13	*93*	*2.8*
Noise pollution	10	19	21	23	14	23	12	*100*	*2.7*
Boat traffic	4	23	20	33	15	16	10	*107*	*2.7*
Light pollution	11	17	20	22	16	17	15	*92*	*2.6*
Insufficient boating safety	12	20	19	26	16	11	15	*92*	*2.5*
Degradation of native aquatic plants	9	18	16	21	12	9	33	*76*	*2.4*
Loss of fish habitat	15	25	8	27	12	13	18	*85*	*2.4*
Loss of wildlife habitat	9	30	13	20	11	13	23	*87*	*2.3*
Loss of shoreline vegetation	12	23	17	27	17	7	16	*91*	*2.3*
Shoreline erosion	11	28	21	22	11	11	18	*93*	*2.3*
Excessive fishing pressure	15	21	20	22	8	11	22	*82*	*2.2*
Excessive aquatic plant growth	15	27	16	9	12	13	26	*77*	*2.2*
Aquatic invasive species	27	21	10	11	6	18	26	*66*	*2.0*
Algae blooms	19	24	13	11	11	10	30	*69*	*2.0*
Water quality degradation	25	25	16	12	5	12	23	*70*	*1.8*
Other	1	1	0	0	0	9	12	*10*	*4.2*



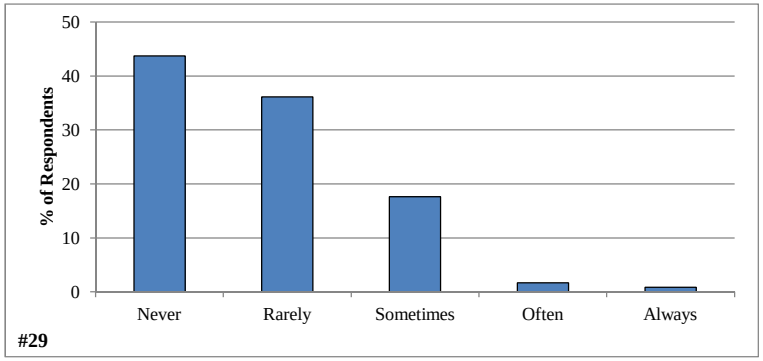
#28 From the list below, please rank your top five concerns regarding Two Sisters Lake.

	1st	2nd	3rd	4th	5th	*% Ranked*
Aquatic invasive species	26	16	16	10	2	*12.0*
Jet ski traffic	23	10	12	8	10	*10.8*
Water quality degradation	25	8	6	9	6	*9.3*
Lakeshore development	5	8	15	6	7	*7.0*
Septic system discharge	4	12	10	4	8	*6.5*
Loss of fish habitat	10	10	4	5	7	*6.2*
Shoreland property runoff	4	4	7	10	9	*5.8*
Boat traffic	3	9	3	7	7	*5.0*
Excessive aquatic plant growth	3	4	4	10	6	*4.6*
Noise pollution	2	7	6	9	3	*4.6*
Light pollution	3	5	6	7	6	*4.6*
Loss of wildlife habitat	2	4	3	7	5	*3.6*
Shoreline erosion	1	5	5	2	7	*3.4*
Loss of shoreline vegetation	0	6	7	4	2	*3.3*
Excessive fishing pressure	3	3	4	3	5	*3.1*
Insufficient boating safety	1	3	3	5	6	*3.1*
Degradation of native aquatic plants	0	1	1	5	6	*2.2*
Algae blooms	0	2	2	2	4	*1.7*
Other	1	3	3	5	6	*3.1*
	116	120	117	118	112	*100.0*



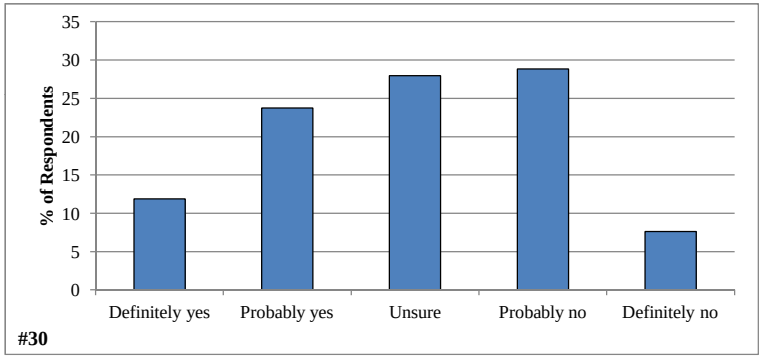
#29 During open water season how often does aquatic plant growth, including algae, negatively impact your enjoyment of Two Sisters Lake?

	Total	%
Never	52	*43.7*
Rarely	43	*36.1*
Sometimes	21	*17.6*
Often	2	*1.7*
Always	1	*0.8*
	119	*100.0*



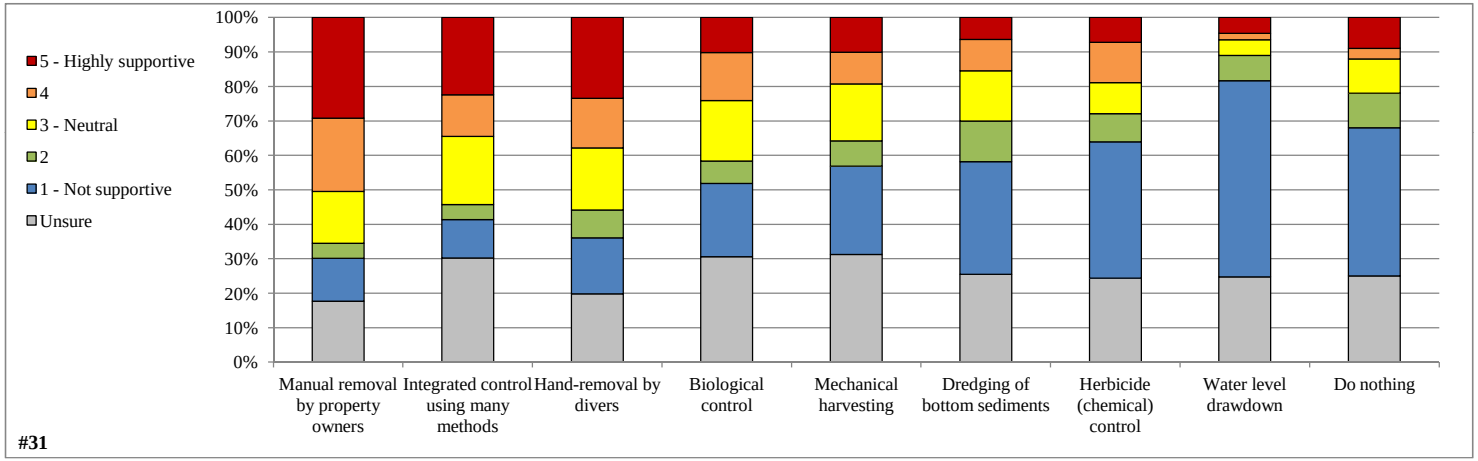
#30 Considering your answer to the question above, do you believe aquatic plant control is needed on Two Sisters Lake?

	Total	%
Definitely yes	14	*11.9*
Probably yes	28	*23.7*
Unsure	33	*28.0*
Probably no	34	*28.8*
Definitely no	9	*7.6*
	118	*100.0*



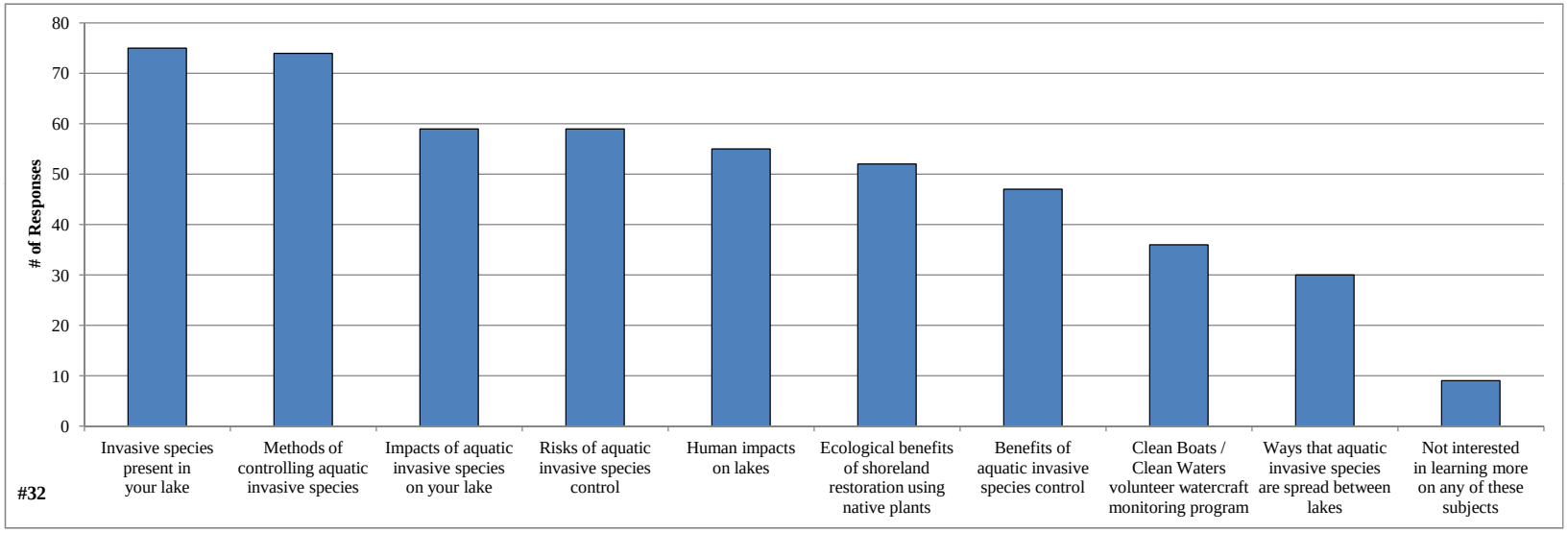
#31 Native aquatic plants can be controlled using many techniques. What is your level of support for the responsible use of the following aquatic plant control techniques on Two Sisters Lake?

	1 - Not supportive	2	3 - Neutral	4	5 - Highly supportive	Unsure	Total	Average
Manual removal by property owners	14	5	17	24	33	20	*93*	*3.6*
Integrated control using many methods	13	5	23	14	26	35	*81*	*3.4*
Hand-removal by divers	18	9	20	16	26	22	*89*	*3.3*
Biological control	23	7	19	15	11	33	*75*	*2.8*
Mechanical harvesting	28	8	18	10	11	34	*75*	*2.6*
Dredging of bottom sediments	36	13	16	10	7	28	*82*	*2.3*
Herbicide (chemical) control	44	9	10	13	8	27	*84*	*2.2*
Water level drawdown	62	8	5	2	5	27	*82*	*1.5*
Do nothing	43	10	10	3	9	25	*75*	*2.0*



#32 Which of these subjects would you like to learn more about?

	Total
Invasive species present in your lake	75
Methods of controlling aquatic invasive species	74
Impacts of aquatic invasive species on your lake	59
Risks of aquatic invasive species control	59
Human impacts on lakes	55
Ecological benefits of shoreland restoration using native plants	52
Benefits of aquatic invasive species control	47
Clean Boats / Clean Waters volunteer watercraft monitoring program	36
Ways that aquatic invasive species are spread between lakes	30
Not interested in learning more on any of these subjects	9



TWO SISTERS LAKE PROPERTY OWNERS ASSOCIATION (TSLPOA)

#33 Before receiving this mailing, have you ever heard of the Two Sisters Lake Property Owners Association?

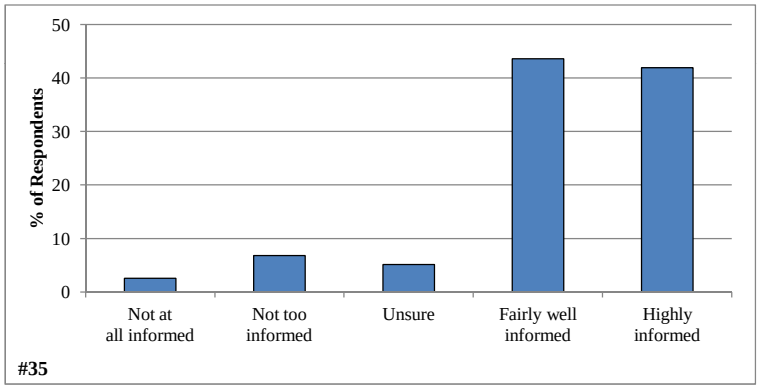
	Total	%
Yes	118	*99.2*
No - *Go to Question #36*	1	*0.8*
	119	*100.0*

#34 What is your membership status with the Two Sisters Lake Property Owners Association?

	Total	%
Current member	109	*93.2*
Former member	3	*2.6*
Never been a member	5	*4.3*
	117	*100.0*

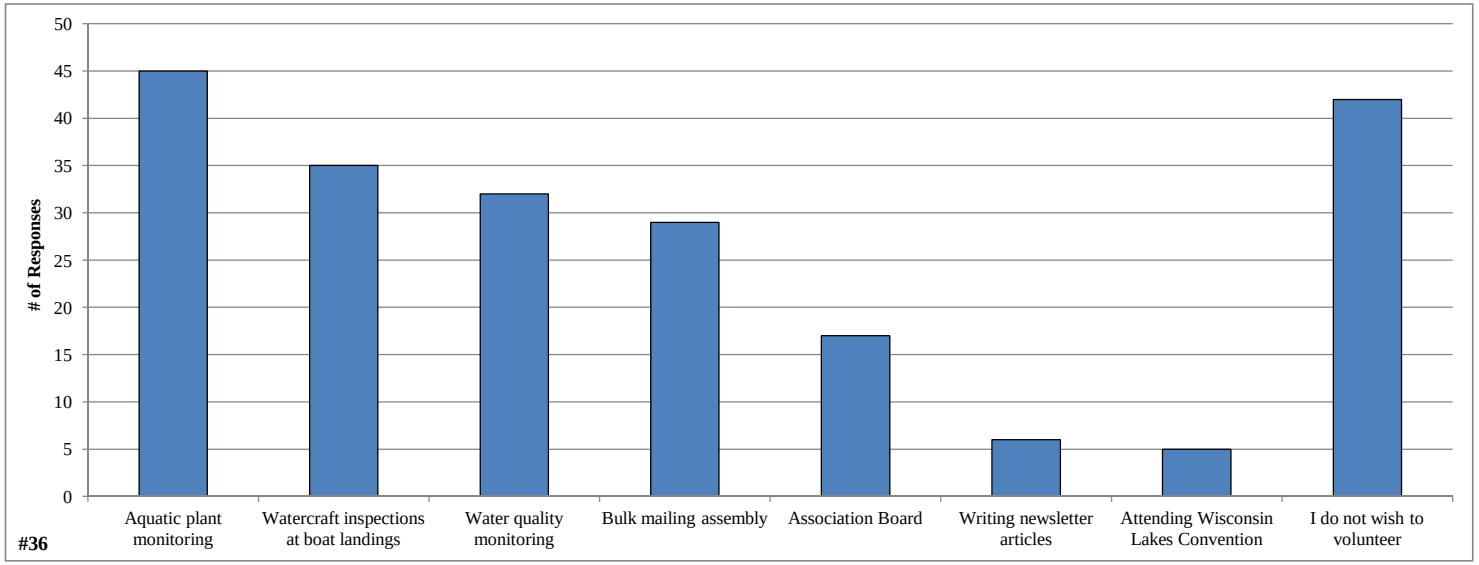
#35 How informed has the Two Sisters Lake Property Owners Association kept you regarding issues with Two Sisters Lake and its management?

	Total	%
Not at all informed	3	*2.6*
Not too informed	8	*6.8*
Unsure	6	*5.1*
Fairly well informed	51	*43.6*
Highly informed	49	*41.9*
	117	*100.0*



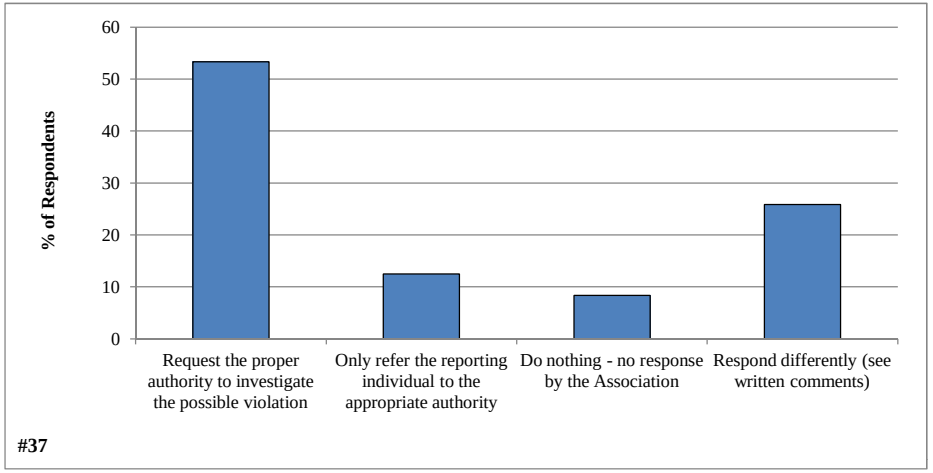
#36 Please circle the activities you would be willing to participate in if the Two Sisters Lake Property Owners Association requires additional assistance.

	Total
Aquatic plant monitoring	45
Watercraft inspections at boat landings	35
Water quality monitoring	32
Bulk mailing assembly	29
Association Board	17
Writing newsletter articles	6
Attending Wisconsin Lakes Convention	5
I do not wish to volunteer	42



#37 If the Association became aware of a possible shoreline protection violation on private property, which of the following possible responses by the Association would you most support?

	Total	%
Request the proper authority to investigate the possible violation	64	*53.3*
Only refer the reporting individual to the appropriate authority	15	*12.5*
Do nothing - no response by the Association	10	*8.3*
Respond differently (*see written comments)*	31	*25.8*
	120	*100.0*

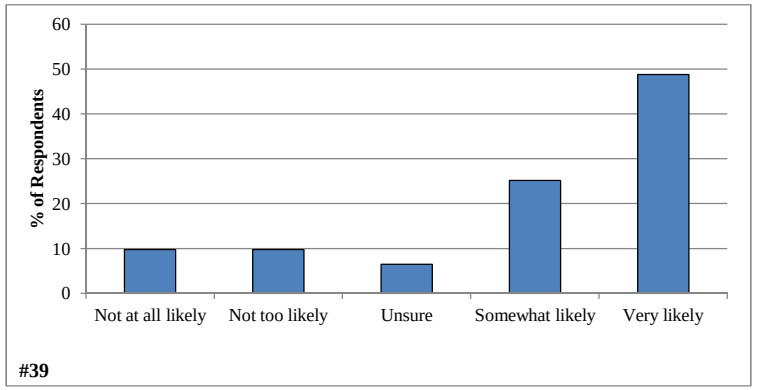


#38 The use of a website is an additional method of communication available to the Association for its membership. Would you favor the Association developing a Two Sisters Lake website?

	Total	%
Yes	80	*66.1*
No	18	*14.9*
Unsure - need more information	23	*19.0*
	121	*100.0*

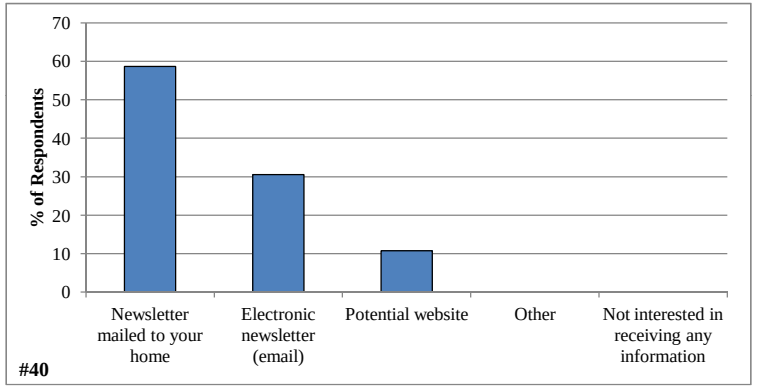
#39 If the Association was to develop a website in order to share information about events and management issues, how likely would you be to visit the website to obtain information?

	Total	%
Not at all likely	12	*9.8*
Not too likely	12	*9.8*
Unsure	8	*6.5*
Somewhat likely	31	*25.2*
Very likely	60	*48.8*
	123	*100.0*



#40 Through what primary source would you most like to receive communication about Two Sisters Lake?

	Total	%
Newsletter mailed to your home	71	*58.7*
Electronic newsletter (email)	37	*30.6*
Potential website	13	*10.7*
Other	0	*0.0*
Not interested in receiving any information	0	*0.0*
	121	*100.0*



Survey Number	1f Comment	5f Comment	7f Comment	12h Comment	14k Comment	15m Comment	20d Comment	25p Comment	27s Comment	28s Comment	37d Comment	40d Comment
1		Land is undeveloped.										
2											Request cooperation.	
3										Too many muskies		
4			I am 88 years old. My estate will sell it.									
5												
6												
7				muskie					Pleasure boating disturbing fishing during early morning and late evening, especailly skiers and tubing. Jet skis tend to be very respectful so far.			
8				muskie							Discuss with property owner first, then request the proper authority to investigate.	
9		Cement block well to sand	Property already owned by children. We rent for estate tax puposes.									
10												
11				muskie								
12												
13												

Survey Number	1f Comment	5f Comment	7f Comment	12h Comment	14k Comment	15m Comment	20d Comment	25p Comment	27s Comment	28s Comment	37d Comment	40d Comment
14									1. Lack of strong and effective legislation to prevent introduction of AIS into Wisconsin lakes with heavy fines, should it occur. 2. Lack of mandatory self-service watercraft wash stations at all public boat landings. 3. WDNR budget mismanagement and waste not allowing WDNR representatives to monitor watercraft entry into lakes during peak season times.			
15												
16	10-14 days monthly throughout year										depends on violation	
17												
18												
19												
20											This is difficult but important.	
21						cross country skiing						
22												
23	Seasonally and once a month other times			muskie					spearing	spearing		
24												
25											Association to contact party directly to seek resolution. If not positive, go to appropriate authority.	
26												
27				muskie							Depending on severity, secure the appropriate authority.	
28												
29				muskie								
30				muskie							If we have knowledge of a violation, contact owner first, before reporting.	

Survey Number	1f Comment	5f Comment	7f Comment	12h Comment	14k Comment	15m Comment	20d Comment	25p Comment	27s Comment	28s Comment	37d Comment	40d Comment
31								catfish or bullhead				
32			Trying to keep up with the taxes so it can remain in the family.									
33												
34	resort			rock bass							A bad violation should be discussed with the violator.	
35	Extended weekends throughout the year											
36	Irregular part-time										Advise homeowner first. If no response, then request proper authority to investigate.	
37											Stop violation before it happens	
38	April thru end of October											
39												
40											Contact offending party	
41											Association member contact party and seek resolution.	
42					Inboard/ outboard							
43				muskie							Ask them if they were aware of the violation -- almost everyone is, in one way or another.	
44												

Survey Number	1f Comment	5f Comment	7f Comment	12h Comment	14k Comment	15m Comment	20d Comment	25p Comment	27s Comment	28s Comment	37d Comment	40d Comment
45												
46												
47								some type of snails		neighbors bathing in lake		
48												
49										view of shore properties from water	Talk with owner prior to notifying authorities	
50												
51				muskie								
52												
53	nine months			muskie								
54												
55												
56												
57											depends on violation	
58		vacant property									Educate the potential violater.	
59												
60												
61			Hold in my family									
62	Most of summer, weekends in fall and winter											
63											Notify landowner of the concern	
64												
65												
66												

Survey Number	1f Comment	5f Comment	7f Comment	12h Comment	14k Comment	15m Comment	20d Comment	25p Comment	27s Comment	28s Comment	37d Comment	40d Comment
67											Advise property owner of violation. This allows owner to correct problem on their own.	
68				muskie								
69												
70											Inform and request property owner to fix citation	
71				muskie, eelpout								
72				muskie								
73											depends on violation	
74				no longer fish								
75												
76												
77	Weekends in the summer							possibly Chinese Mystery Snails and Rusty Crayfish				
78												
79												
80												

Survey Number	1f Comment	5f Comment	7f Comment	12h Comment	14k Comment	15m Comment	20d Comment	25p Comment	27s Comment	28s Comment	37d Comment	40d Comment
81	monthly throughout the year								Neighbors down our road frequently don't control their dogs, that go on our property, bark and growl, and try to attack our dog.			
82				Never catch any								
83												
84												
85											Contact owner	
86								some type of snail				
87												
88											First talk to property owner, make them aware of violation.	
89												
90											If no action, refer to proper authority.	
91								None	Need to reduce use of boat landing -- limit use. If we are a "lake district," could we eliminate boat public access.			
92				musky								
93												
	plus some winter weekends			no longer fishing							Make property owner aware of violation. If he does not comply, then contact proper authority.	
95												

Survey Number	1f Comment	5f Comment	7f Comment	12h Comment	14k Comment	15m Comment	20d Comment	25p Comment	27s Comment	28s Comment	37d Comment	40d Comment
96						dog walking and gardening					Get response and commitment from owner, then request proper authority, if no reply.	
97												
98												
99					250 HP inboard							
100												
101					small inflatable and inner tube							
102												
103												
104												
105									Spearing of fish when ice melts in April is detrimental to the fish count and quality and size of fish caught by license-bearing fisherpersons.		Association to notify violator. If no action by violator, report to proper authority.	
106					shell for skulling						Notify offending party first to give chance to first abate. Then, notify auuthority.	
107												
108												
109												
110				Rock bass and muskie								

Survey Number	1f Comment	5f Comment	7f Comment	12h Comment	14k Comment	15m Comment	20d Comment	25p Comment	27s Comment	28s Comment	37d Comment	40d Comment
111		grandfather outhouse										
112										swing tree on island		
113												
114												
115												
116											Work together to solve the issue. Involve authorities only as a last resort and only if a violation is confirmed.	
117												
118												
119											depends	
120					none			none				

Survey Number	Other Comments (and Question 41)
1	
2	Our lake is a delight. We need to work to maintain lake quality for us and those who follow. We are indebted to those who volunteer to maintain and improve our lake.
3	
4	
5	For all the moneys we spend supporting the DNR, where are they with this situation? These questions are geared toward the current opinions of the Association Board members. They already know the answers and the direction they are going to take.
6	
7	While I feel the Association has done a very good job in its approach to the protection and construction of our lake, I worry the Association may be trying to take on too much themselves with issues that may not be of concern. I would like to make sure the Association can enforce, or try to enforce, current policies before taking on new responsibilities. Example: pleasure boating too early or too late and disturbing people fishing.
8	
9	
10	I have been coming to TSL since my grandfather bought our property in 1954. We have always enjoyed motor boating. Fishing has become a recent activity, but we have fished since I was a kid. We will probably try ice fishing this winter. The boat landing is awful. It definitely affects decisions to pull aboat out and visit another lake. Thank sfor all your efforts in keeping the lake the pristine lake we have.
11	
12	
13	
14	Two Sisters Lake should take the intiative to propose the design, construction, operation and maintenance of a self-service wash station at our public boat landing. Its use should be mandatory for all watercraft entering the lake. This is the right time and place to take this important step. We have the attention of the WDNR, Town of Newbold and the Onterra Company, that is the coordinator of this survey and our lake management plan. I am confident that with a "can do" attitude, all potential legal or governmental obstacles could be overcome.
15	
16	Would like to see the quality of the lake maintained at its current level. We feel Board does a good job of being realistic as well as futuristic in evaluating what should be done.
17	
18	
19	
20	This lake is so beautiful and I want it to stay that way. I am not the only one that needs information on how to take care of this wonderful lake.
21	
22	
23	When we bought our property, the walleye fishery was outstanding. Now, with the planting of large-mouth bass years ago by the Association and the tribal spearing, the quantity of fish has gone down. There are still some beautiful walleyes here, but getting a meal can be an adventure.
24	
25	See separate Word document containing a full page response.
26	
27	
28	
29	
30	I am pleased we have an active association whose mission it is to keep the lake quality it is for generations to come.
31	Kudos to the Association for your excellent efforts in the past to keep property owners educated and informed.
32	
33	
34	We should use common sense and not discipline to monitor the actions of others. Excessive use of anything -- light, noise, chemicals, shoreline clearing, building, etc., is poor management of this beautiful resource. In other words, trust your neighbors to do the right and sensible thing, not only for themselves but also for generations to come. Thank you for caring -- all Planning Committee and Lake Association members. You have done an excellent job to date. Sorry, I am too old to help much.
35	
36	
37	Boat houses/garages should not be allowed on the shoreline -- 75 feet should be the rule. Existing structures on the shoreline should be torn down and definitely not allowed in the future. Current jet ski rules need to be enforced. Right now, it's a joke. Fisherman need their space, more courtesy from jet skiers and pleasure boats.
38	
39	
40	Observed changes in 40 years -- 1) frog population is a fraction of what it was, 2) reduction of bottom of lake crayfish, 3) increase in small snails on bottom of lake
41	Thank you for all your efforts to make this survey possible.
42	
43	See separate Word document containing a full page response.
44	Appreciative of this questionnaire and the work done by TSLPOA in all of these areas. Willing to participate as a volunteer. Treasure the lake and cultivate this attitude in our children and grandchildren as well.
45	
46	
47	I don't think the Association enacts rules contrary to state guidelines. Wave runner hours/boating hours should follow state guidelines.
48	
49	Concerned that Association membership is falling. Long term ongoing costs for monitoring lake heeds full support of property owners even if taxing is required.
50	
51	

Survey Number	Other Comments (and Question 41)
52	
53	
54	
55	I love the lake. I think the Association is doing a good job at attempting to keep invasive species out. I think the Association is a little too strict regarding the use of personal watercraft during the weekends of Memorial Day, July 4th, and Labor Day.
56	Many people are violating the fireworks restriction.
57	Advise homeowners with lawns of lake problems caused by fertilizer and other treatments.
58	Thank you for this effort.
59	I thank all the volunteers for their help. We have to keep Two Sisters a clean lake.
60	I would like to see a ban on new boat house construction. If every property owner built a shoreline boat house, this lake would look like a trailer park. My grandparents were the first year-round residents on this lake in the early 1900s. They would be appalled to see what has happened to the shoreline.
61	I am striving to keep my land wild. My heart is in it.
62	
63	I am very glad that the Lake Association takes its job so seriously and does so much to keep the residents informed and our lake is in good shape. We have to work together to preserve this wonderful lake.
64	
65	See separate Word document containing a full page response.
66	We would like to see pan fish stocking rather than walleye stocking. We feel very lucky to have knowledgeable people monitoring our lake quality. Please continue to keep up the good work of preserving our beautiful lake.
67	Our cottage is on north shore of the narrows. It is necessary to barricade our shore to stop wave erosion. Boats coming though at high speed are just as damaging as boats that slow down when entering narrows. Suggest safety zone 300 ft from either end of narrows. Boat traffic with tow behind and skiers are putting their cargo at risk in the cramped narrows. Slow down. Jet ski regs are not necessary on lake. Would rather have jet skis leaving little or no wake rather than high speed boats blasting through. Jet ski ordinance is restrictive from the old regime on the lake.
68	
69	
70	1) More attention to older homes close to shoreline with old septic systems, 2) control size of boats on lake, 3) control size of motors on boats, 4) stocking of fish must continue, 4) I know this is impossible, but stop Indians from fish harvesting.
71	The use of illegal fireworks has grown considerably over last 16 years from frequent use of firecrackers throughout summer (not just july 4th) but multiple sites of elaborate and illegal displays over the July 4th week and longer. My understanding that in addition to noise and possible fire hazard, they contribute to water quality degradation as remaining parts fall into lake. Use of fireworks should be discouraged, not just because illegal,but damage to our water.
72	
73	Some violations are serious and affect other lake owners -- fertilizer, run-off, light and sound pollution. Other "violations" like removing a tree that falls into the water destroying your dock/boat/beach are absurd. Trees that fall into lake should be able to be removed. Used to be a "shoreline vegetation removal" violation. Not sure if still is.
74	
75	
76	I really appreciate the efforts of everyone to keep our lake like it is and wish I was around more to help out.
77	We are fortunate to have had 2 TSLPOA members monitoring the lake and informing us of water quality benefits & issues for years. They have been leading monitoring of boats and shoreline for about 10 years. Thus, we have a leg up on other lakes. As more people come on the lake, we must be more diligent. We have not been so good on noise and light issues. We have also been monitoring & informing the membership on our loon population and providing nesting sites.
78	
79	
80	
81	Not a year-round resident and don't have a lot of timewhen I visit. Would like to help out, but just don't have time now -- hopefully will do so in future. Willing to make financial contributions, however.
82	
83	
84	Some of the questions were asked twice -- just worded differently.
85	More control of jet ski traffice and use is needed. Let owners know the restrictions on what hours they can use jet skis.
86	I'm most concerned about homeowners not members of Association and connected to our group efforts. Like to see Association do whatever it could to reach 100% of owners with this and other projects, so all receive the same info. Want to see Association create "good neighbor' list. Sometimes at Annual Mtg strong feelings expressed. Some people have "I'll do what I want" attitude. Jet ski times, fishing times, noise, dogs, fireworks, light pollution -- we need to share same resource.
87	We are pleased with the ongoing efforts of the Assoc to preserve the high quality of the lake, this being one of them. We hope to keep multiple condos away. Having a minimum shoreline footage as we have has helped. I have enjoyed the lake since childhood and my kids and grandkids have the same sense of value.
88	Ban use of all lawn fertilizers. Ban use of all weed killers. Use harmless dye to check runoff of septic and wash machines. Continue checking boats at landing and pass on info. Info to property owners what to do to protect lake -- not all owners belong to Association. Expand getting the info out. Thanks for all your efforts on behalf of our lake.
89	
90	
91	We are proud and glad that for decades we have had our water quality monitored. More recently, we have seen many of our lake residents respond to the calls for volunteerism on our lake.
92	
93	
	Have noticed soap suds in water and on shore at cvarious times.
95	
96	Excellent association -- proactive Board.
97	
98	
99	
100	

Survey Number	Other Comments (and Question 41)
101	
102	Thanks to the Association Board members for your good work! Let's keep the lake clean, quiet (for the most part) and friendly. Light pollution is an issue and some former Board members need to take this seriously -- walk the talk. Thank you.
103	
104	See separate Word document containing a full page response.
105	Email and newsletter mailing should be used. Give members option of hard copy or e-mail. Those without computer can receive newsletter. Hard copy newsletter can be printed from website for that period so there is not separate function to produce hard copy newsletter. Younger generation of property owners and their kids would be willing to contribute time to do this. I would contribute money to this effort. So many more options, contents, pictures, etc. going electronic. This is the 21st century.
106	Good job. We appreciate time and effort of Board and participating members. I think it would be advantageous to have our fire numbers on our piers for identification. We could then put our fire numbers on our possessions/toys for return when lost. Also, identify ownership of the respective properties via a Directory.
107	Jet skis are out of control. There is no respect for the allowed hours and safety. I was passed simultaneously by 3 jet skis in the narrows in August. I am in contact with Dave Kroll about enforcment. As far as I am concerned, they should be outlawed as well as any boats with more than 150 HP on the lake.
108	Thanks to the huge efforts and countless hours spent by individuals such as Robert Nicholson and Paul Kuhn who have monitored water quality through the years and others who have volunteered time to build a strong lake association that is proactive in the protection of this beautiful natural resource -- we move forward. May the next generation live as responsibly, protecting her for many years to come.
109	
110	
111	
112	Swing tree on island is a disaster waiting to happen. Either someone will break their neck or will be hit by a passing boat/jet ski in narrow passage between island and rock bar. Swing tree is also huge source of noise pollution to neighboring homes. Often as many as 5 boats/pontoons docking on island with radios blasting -- all waiting their turns on the swing. I vote for taking that tree down immediately. It's like having neighbors with a wild party nearly every day in summer.
113	
114	
115	The island swing is a constant source of boat raffic and noise and is a safety hazard. The tree will someday fall down (probalby when someone is swiinging on it) but should be cut down now.
116	
117	We're very proud of TSLPOA and the job the Board and other volunteers do.
118	I have come to the lake since I was 6 months old to visit my godmother. I have owned her old property for 12 years. I have not seen any significant decline in water or shoreline quality since my childhood. It is still a wonderful lake that I love with my whole heart.
119	
120	

Survey #26
Response to Q #41
(Comments)

I appreciate the value of the Association and how it can benefit the people that own property on the Two Sisters Lake.

I'm sure that it is your hope that the majority of the people receiving the survey will complete it as accurately as possible. The survey asks questions that are very easy to answer that will provide nice anecdotal information. The survey questions that relate to aquatic invasive plants and species are beyond most individual's knowledge base and therefore will not provide valid input. I sought the education, experience and understanding of a fisheries biologist with a masters degree to give me insight into the problems related to aquatic invasive plants and species. My responses to the survey are based on her input. She is my niece and grew up on the lake as I did. We concluded that policies and procedures related to prevention, mitigation, control, etc needs to be in the hands of an educated body and not the average Two Sisters resident. The body of knowledge is vast, however, it can be boiled down to some basic precautions that everyone that uses public waterways of Wisconsin NEEDS TO KNOW. While the Wisconsin Department of Natural Resources understands the need to educate the public there is a significant GAP between what the public knows and NEEDS TO KNOW about aquatic invasive plants and species. For instance…there are many lakes in Wisconsin that are infested with aquatic invasive plants and species. Do you know which lakes are infested with what? Here is a website with the answer:

http://dnr.wi.gov/lakes/invasives/AISByWaterbody.aspx

Did you know that there are about 112 lakes just in Oneida County that have aquatic invasive plants and/or species, including Two Sisters Lake?

Moving a boat from one lake to another…I personally would be very interested in knowing which lakes are infested so that I could avoid them or know what I need to do or not do to avoid infesting other lakes. I would be supportive of the WDNR posting signs at public landings of lakes that are infested and what they are infested with. Below is some education that the average person should be enlightened with:

http://dnr.wi.gov/invasives/prevention.htm

We all know this subject is daunting in scope and the ramifications are potentially devastating. One big question will arise if and when nasty invasives come to Two Sisters Lake…Who is going to PAY for expensive management/control of the problem. PREVENTION is our cheapest approach and I know that we have volunteers that so graciously donate their time to protect our most valuable resource. I would support the placement of a sign at the pier pleading our interest in preserving the beautiful Two Sisters Lake. Make some mention to ***boaters right to launch a boat in Two Sisters Lake*** with an appreciation of their time to self inspect their trailer and boat for invasives along with a THANK YOU!!

We have enjoyed 43 years of family time at Two Sisters Lake and look forward to preserving this for generations to come.

Response to Survey Q #41
Respondent #43

To: Two Sisters Lake Management Planning Project

Re: Stakeholder Survey

41. I would like to let you know that I feel that the TSLPOA has done an excellent job helping its members learn more about the lake and about possible dangers to the lake. The time spent by some of the volunteers is amazing.

I would also like to let you know that I feel too many members have forgotten about the fun they had enjoying the lake in the past and seem to now focus on trying to regulate the heck out of everything. Whereas I am content with the way things currently are, I am very concerned that the TSLPOA may try to push further regulations through that will negatively impact our enjoyment of the lake. The question - #37 – about possible shoreline protection violations on private property and how we would like the Association to respond concerns me. I truly believe that if you went around the lake and looked at every possible violation you would find that over half of our members are in some violation or another. I most certainly do NOT want us to start "upsetting the apple cart" over every little thing. I feel any concern can almost always be resolved with a friendly discussion, if it is even warranted. If there are members that have too many boats in the water, too big of a raft, too many boat docking areas, too long of a pier, etc do we really want to do anything when these items don't really impact the rest of us? There are so many rules and regulations it is getting to be silly. We already have a lake regulation that I am not really sure is enforceable that we are supposed to not use personal watercraft after 3 or 4 pm.

I absolutely love the lake and everything about it. I plan on retiring there. I think the Association has done a wonderful job with all that it has done and hope it continues to do so. What I don't want is to see us start increasing regulations and nit picking every tiny little possible thing people can find. I love my neighbors and would do just about anything they needed me to do at any time day or night. Let's make sure we keep things positive and continue to have one of the absolute best lakes to be on in the country.

Thank you.

Response to Q#41
Survey #65

41. **Please feel free to provide written comments concerning Two Sisters Lake, its current and/or historic condition, and its management.** Please use an additional sheet if necessary.

① Over 41 years, many things change. We have no problem with change. Everyone should be able to enjoy the lake: water skiing/tubing, jet skiing etc. However common sense does not prevail when some of these "cowboys" interfere with wild life, people who are fishing or coming too close to the shoreline.

② Property owners who have potted plants on docks or too close to the shoreline. The plants are beautiful but the soil/fertilizer from them/pots are going into the lake degrading water quality. Owners need to be educated. (Over)

3. People who grew up in the country appreciate the darkness and watching the night sky. The lighting that now prevails on some residences light up the woods and the lake shoreline. This interferes with star gazing. A flash light did the job for so many years and is obsolete today.

We hope that future generations can enjoy the quality of lake living that we have had the privilege of experiencing. We all need to be good stewards of this lake and the surrounding woods.

Response to Q #41
Survey #104

I think one of our greatest challenges to the future of Two Sisters Lake is controlling AIS. I'm involved as a volunteer in the boat landing inspection program and the shoreline inspection program. These are worthwhile activities and should continue.

I recommend expanding the program to include all property owners on the lake. We need to send each property owner a detailed description of AIS and let them keep an eye on their own shoreline. The 8 x 10 pictures given to me when I started shoreline inspections were excellent. They have expanded my knowledge of what to look for. We spend a lot of time talking about AIS, supporting AIS and donating to AIS but I'll bet many of our members (and nonmembers) could not identify the species of plants and animals we're referring to. People are interested in keeping the lake AIS free, especially on their own shoreline. Let's give them the information to do it.

To complete the program I would recommend a member of the Lake Association Board or AIS committee member as a point of contact for emails and telephone calls on these items. If you're not sure what's on your shoreline, call or email the contact person and we'll find out for sure.

On another subject I have seen a species of algae, maybe metaphyton, in Eagle Bay and on a boat lift on the north side of the small lake. It looks like a fresh water jellyfish. I don't think it's a problem.

Thanks for the work you do for our lake!

C

APPENDIX C

Lake Waterway Ordinance (1999)

WATERWAY ORDINANCE

Town of Newbold # 02-1999 (A Revision of # 03-1996)

A SOLE ORDINANCE TO REGULATE BOATING UPON THE WATERS OF TWO SISTERS LAKE AND PRESCRIBING PENALTIES THEREOF.

The Town Board of the Town of Newbold, Oneida County, Wisconsin, does ordain as follows:

SECTION I: APPLICABILITY AND ENFORCEMENT
A. The provisions of this ordinance shall apply to the waters of Two Sisters Lake in the Town of Newbold, Oneida County, Wisconsin.
B. This ordinance will be enforced by the officers of the Town of Newbold and any other authorized law enforcement officers.

SECTION II: INTENT
The intent of this ordinance is to provide safe and healthful conditions for the enjoyment of aquatic recreation consistent with public rights and interests, and the capability of the water resources.

SECTION III: STATE BOATING AND SAFETY LAWS ADOPTED
Wisconsin Boating and Safety Laws and Rules are adopted by reference.

SECTION IV: DEFINITIONS
A. "Slow-No-Wake" means that speed at which a boat moves as slowly as possible while still maintaining steerage control.

SECTION V: CONTROLLED AREAS
No person shall operate a boat faster than slow-no-wake in the following locations:
A. Tamarack Bay: Northwest of a line from the southeast lot line of the parcel described as the East 538 feet of the West 860.5 feet of Govt. Lot 7, Section 17-T38N-R8E (tax number NE 644.5) to the eastern lot line of the property described as Parcels 9 & 10 of Genisot Plat 7267, part of the SE SE, Section 18-T38N-R8E (tax number NE 661.2).
B. Spring Bay: South of a line from the eastern lot line of the parcel described as the East 200 feet of Government Lot 4, Section 17¬T38N-R8E (tax number NE647.2) due south to the south shore of the bay.
C. Eagle Bay located in the SE NW and NE SW parts of Section 19-T38N-R8E. D. HAZARD ROCK: A buoy will be placed at the hazard rock which is located near the emerging weed bed south of the north shore of the large portion of Two Sisters Lake.

SECTION VI: PLACEMENT AND MAINTENANCE OF MARKERS
Purchase and placement of markers and public landing postings will be by the Two Sisters Lake Property Owners Association, Inc., in accordance with instructions by the Town Chairperson and as described in Section V above, and further that the Association will maintain the markers and postings in a manner sufficient to meet State of Wisconsin requirements.

SECTION VII: POSTING REQUIREMENTS
The Town of Newbold shall place and maintain a copy of this ordinance at all public access points on Two Sisters Lake.

SECTION VIII: PENALTIES
Wisconsin state boating penalties as found in Section 30.80, Wisconsin Statutes, are adopted by reference.

SECTION IX: SEVERABILITY
The provisions of this ordinance shall be deemed severable and it is expressly declared that the Town of Newbold Board would have passed the other provisions of this ordinance irrespective of whether or not one or more provisions may be declared invalid. If any provision of this ordinance or the application to any

person or circumstances is held invalid, the remainder of the ordinance and the application of such provisions to other persons or circumstances shall not be affected.

SECTION X: EFFECTIVE DATE
This ordinance shall take effect and be in force from and after its passage and posting as provided by law. The foregoing ordinance was adopted at a regular meeting of the Town Board of the Town of Newbold on January 28, 1999

effective jan 29, 1999

D

APPENDIX D

Water quality data

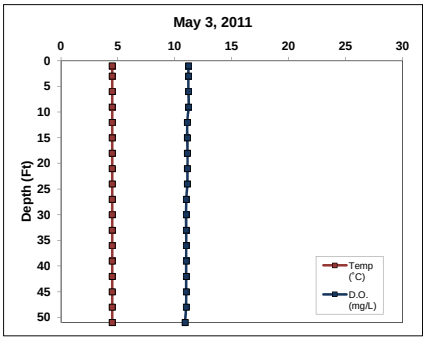
Two Sisters Lake

Date: 5/3/2011
Time: 8:15
Weather: 100% clouds, snow, 31°F
Entry: TWH

TSLS
TSLB

Max Depth: 54.4
Depth (ft): 3.0
Depth (ft): 51.0
Secchi Depth (ft): 8.8

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	4.5	11.2	7.6	63.0
3	4.5	11.2	7.6	63.0
6	4.5	11.2	7.6	63.0
9	4.5	11.2	7.6	63.0
12	4.5	11.1	7.6	63.0
15	4.5	11.1	7.6	63.0
18	4.5	11.1	7.6	63.0
21	4.5	11.1	7.6	63.0
24	4.5	11.1	7.6	63.0
27	4.5	11.0	7.6	63.0
30	4.5	11.0	7.6	63.0
33	4.5	11.0	7.6	63.0
36	4.5	11.0	7.6	63.0
39	4.5	11.0	7.6	63.0
42	4.5	11.0	7.6	63.0
45	4.5	11.0	7.6	63.0
48	4.5	11.0	7.6	64.0
51	4.5	10.9	7.6	64.0



Parameter	TSLS	TSLB
Total P (µg/L)	13.00	15.00
Dissolved P (µg/L)	ND	ND
Chl-a (µg/L)	6.78	
TKN (µg/L)	240.00	330.00
$NO_3 + NO_2$-N (µg/L)	ND	ND
NH_3-N (µg/L)	ND	40.00
Total N (µg/L)	240.00	330.00
Lab Cond. (µS/cm)	67.00	68.00
Lab pH	7.52	7.47
Alkalinity (mg/L $CaCO_3$)	28.60	29.00
Total Susp. Solids (mg/L)	ND	ND
Calcium (mg/L)	7.00	

Data collected by TAH (Onterra)

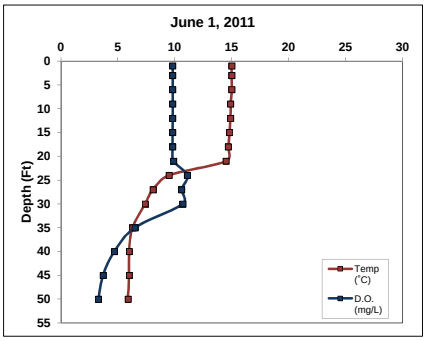
Two Sisters Lake

Date: 6/1/2011
Time: 14:25
Weather: 90% sun, very windy, 70°F
Entry: TWH

TSLS
TSLB

Max Depth: 54.7
Depth (ft): 3.0
Depth (ft): 50.0
Secchi Depth (ft): 15.5

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	15.0	9.8	8.3	65.0
3	15.0	9.8	8.3	65.0
6	15.0	9.8	8.3	65.0
9	14.9	9.8	8.3	65.0
12	14.9	9.8	8.3	65.0
15	14.8	9.8	8.3	65.0
18	14.7	9.8	8.3	65.0
21	14.5	9.9	8.3	65.0
24	9.5	11.1	8.3	64.0
27	8.1	10.6	8.1	64.0
30	7.4	10.7	7.9	64.0
35	6.3	6.5	7.6	63.0
40	6.0	4.7	7.4	62.0
45	6.0	3.7	7.3	62.0
50	5.9	3.3	7.2	62.0



Parameter	TSLS	TSLB
Total P (µg/L)	11.00	26.00
Dissolved P (µg/L)		
Chl-a (µg/L)	2.04	
TKN (µg/L)		
$NO_3 + NO_2$-N (µg/L)		
NH_3-N (µg/L)		
Total N (µg/L)		
Lab Cond. (µS/cm)		
Lab pH		
Alkalinity (mg/L $CaCO_3$)		
Total Susp. Solids (mg/L)	ND	3.00
Calcium (mg/L)		

Data collected by TWH and MMF (Onterra)

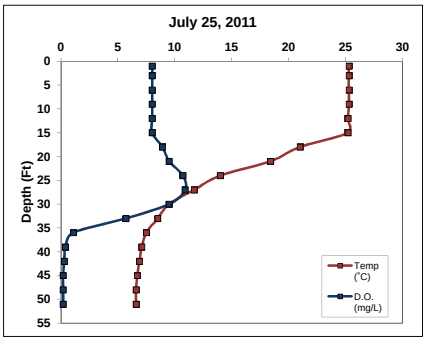
Two Sisters Lake

Date: 7/25/2011
Time: 15:30
Weather: 80°F 25% clouds and windy
Entry: MMF

TSLS
TSLB

Max Depth: 54.6
Depth (ft): 3.0
Depth (ft): 51.0
Secchi Depth (ft): 17.3

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	25.3	8.0	8.5	67.0
3	25.3	8.0	8.5	67.0
6	25.3	8.0	8.5	67.0
9	25.3	8.0	8.5	67.0
12	25.2	8.0	8.5	67.0
15	25.2	8.0	8.5	67.0
18	21.0	8.9	8.4	66.0
21	18.4	9.5	8.3	66.0
24	14.0	10.7	8.1	65.0
27	11.7	10.9	8.0	65.0
30	9.5	9.5	7.8	65.0
33	8.5	5.7	7.6	65.0
36	7.5	1.1	7.3	68.0
39	7.1	0.4	7.1	70.0
42	6.9	0.3	7.1	72.0
45	6.7	0.2	7.0	79.0
48	6.6	0.2	7.0	83.0
51	6.6	0.2	7.0	84.0



Parameter	TSLS	TSLB
Total P (µg/L)	9.00	90.00
Dissolved P (µg/L)	ND	18.00
Chl-a (µg/L)	1.61	
TKN (µg/L)	280.00	590.00
$NO_3 + NO_2$-N (µg/L)	ND	ND
NH_3-N (µg/L)	ND	207.00
Total N (µg/L)	280.00	590.00
Lab Cond. (µS/cm)	68.00	78.00
Lab pH	7.84	6.91
Alkalinity (mg/L $CaCO_3$)	28.70	34.00
Total Susp. Solids (mg/L)	ND	7.00
Calcium (mg/L)		

Data collected by TWH and MMF (Onterra)

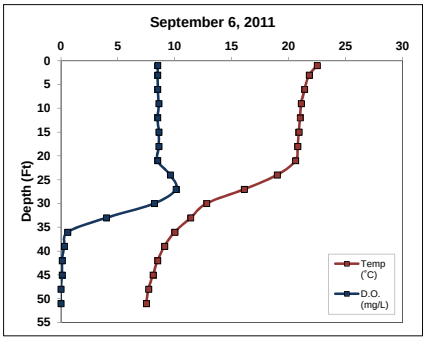
Two Sisters Lake

Date: 9/6/2011
Time: 14:30
Weather: clear, little wind, 65°
Entry: TWH

TSLS
TSLB

Max Depth: 54.1
Depth (ft): 3
Depth (ft): 51
Secchi Depth (ft): 17.1

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	22.5	8.5		
3	21.8	8.5		
6	21.4	8.5		
9	21.1	8.6		
12	21	8.5		
15	20.9	8.6		
18	20.8	8.6		
21	20.6	8.5		
24	19	9.6		
27	16.1	10.1		
30	12.8	8.2		
33	11.4	4		
36	10	0.6		
39	9.1	0.3		
42	8.5	0.1		
45	8.1	0.1		
48	7.7	0		
51	7.5	0		



Parameter	TSLS	TSLB
Total P (µg/L)	13.00	257.00
Dissolved P (µg/L)		
Chl-a (µg/L)	25.80	
TKN (µg/L)		
$NO_3 + NO_2$-N (µg/L)		
NH_3-N (µg/L)		
Total N (µg/L)		
Lab Cond. (µS/cm)		
Lab pH		
Alkalinity (mg/L $CaCO_3$)		
Total Susp. Solids (mg/L)	ND	15.00
Calcium (mg/L)		

Data collected by TAH and TWH (Onterra)

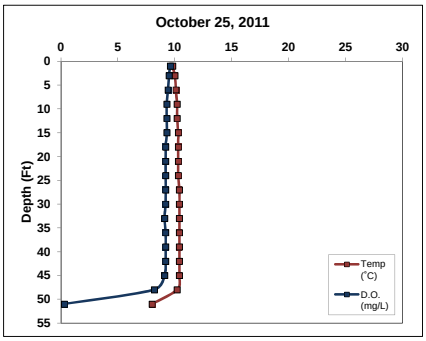
Two Sisters Lake

Date: 10/25/2011
Time: 1:10
Weather: 100% clouds, breezy, 45°F
Entry: TWH

TSLS
TSLB

Max Depth: 54.6
Depth (ft): 3
Depth (ft): 51
Secchi Depth (ft): 11.9

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	9.8	9.6		
3	10	9.5		
6	10.1	9.4		
9	10.2	9.3		
12	10.2	9.3		
15	10.3	9.3		
18	10.3	9.2		
21	10.3	9.2		
24	10.3	9.2		
27	10.4	9.2		
30	10.4	9.2		
33	10.4	9.1		
36	10.4	9.2		
39	10.4	9.2		
42	10.4	9.2		
45	10.4	9.1		
48	10.2	8.2		
51	8	0.3		



Parameter	TSLS	TSLB
Total P (µg/L)	13.00	161.00
Dissolved P (µg/L)		
Chl-a (µg/L)	3.60	
TKN (µg/L)		
$NO_3 + NO_2$-N (µg/L)		
NH_3-N (µg/L)		
Total N (µg/L)		
Lab Cond. (µS/cm)		
Lab pH		
Alkalinity (mg/L $CaCO_3$)		
Total Susp. Solids (mg/L)	ND	12.00
Calcium (mg/L)		

Data collected by TWH (Onterra)

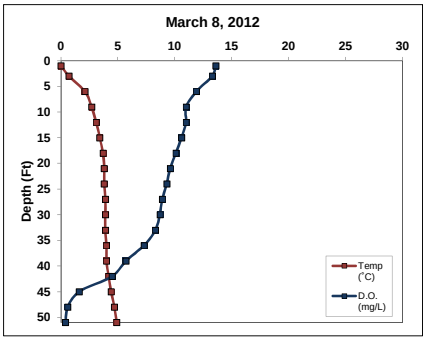
Two Sisters Lake

Date: 3/8/2012
Time: 14:00
Weather: 75% sun
Entry: TWH

TSLS
TSLB

Max Depth: 54.2
Depth (ft): 3
Depth (ft): 51
Secchi Depth (ft): 34.2

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	0	13.6	8.7	98
3	0.7	13.3	8.7	72
6	2.1	11.9	8.5	67
9	2.7	11	8.4	66
12	3.1	11	8.3	66
15	3.4	10.6	8.3	66
18	3.7	10.1	8.2	66
21	3.8	9.6	8.2	66
24	3.8	9.3	8.1	66
27	3.9	8.9	8.1	67
30	3.9	8.7	8	67
33	3.9	8.3	8	67
36	4	7.3	7.9	68
39	4	5.7	7.8	69
42	4.2	4.5	7.8	71
45	4.4	1.6	7.6	76
48	4.7	0.6	7.5	94
51	4.9	0.4	7.5	123



Parameter	TSLS	TSLB
Total P (µg/L)	11.00	280.00
Dissolved P (µg/L)	ND	167.00
Chl-a (µg/L)	NA	NA
TKN (µg/L)	260.00	1720.00
$NO_3 + NO_2$-N (µg/L)	25.00	ND
NH_3-N (µg/L)	33.00	1220.00
Total N (µg/L)	285.00	1720.00
Lab Cond. (µS/cm)	NA	NA
Lab pH	NA	NA
Alkalinity (mg/L $CaCO_3$)	NA	NA
Total Susp. Solids (mg/L)	ND	10.00
Calcium (mg/L)	NA	NA

Data collected by TAH and TWH (Onterra) Ice depth: 1.6ft

Trophic State Index (WTSI)

Year	TP	Chl-a	Secchi

Water Quality Data

2011	Surface	Bottom

1986			36.5
1987			32.1
1988			34.6
1989			32.4
1990			33.2
1991			34.1
1992			35.1
1993			36.1
1994			34.7
1995			34.9
1996			33.0
2001			37.4
2002			37.4
2003	41.1	38.1	38.6
2004	38.4	36.1	36.5
2005	42.5	36.4	37.4
2006	39.6	35.5	36.6
2007	36.4	38.2	36.2
2008	37.8	35.7	37.4
2009	40.0	35.3	34.7
2010	38.7	39.0	35.2
2011	38.2	37.7	37.1
#REF!			
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#REF!			
All Years (Weighted)	39.2	37.0	35.5
ep, Headwater Drainage Lak	45.0	46.4	42.8
NLF Ecoregion	48.1	47.5	45.7

Parameter	Count	Mean	Count	Mean
Secchi Depth (feet)	6	17.5	NA	NA
Total P (µg/L)	6	11.7	6	138.2
Dissolved P (µg/L)	3	ND	3	92.5
Chl a (µg/L)	5	8.0	0	NA
TKN (µg/L	3	260.0	3	880.0
NO3+NO2-N (µg/L)	3	25.0	3	ND
NH3-N (µg/L)	3	33.0	3	489.0
Total N (µg/L)	3	268.3	3	880.0
Lab Cond. (µS/cm)	2	67.5	2	73.0
Lab pH	2	7.7	2	7.2
Alkal (mg/l CaCO3)	2	28.7	2	31.5
Total Susp Sol (mg/l)	6	ND	6	9.4
Calcium (µg/L)	1	7.0	0	NA

	Secchi (feet)				Chlorophyll-*a* (µg/L)				Total Phosphorus (µg/L)			
	Growing Season		Summer		Growing Season		Summer		Growing Season		Summer	
Year	Count	Mean	Count	Mean	Count	Mean	Count	Mean	Count	Mean	Count	Mean
1986	7	16.3	6	16.8								
1987	8	21.1	5	22.7								
1988	6	19.1	4	19.2								
1989	14	22.6	12	22.2								
1990	6	21.9	5	21.1								
1991	4	17.5	2	19.8								
1992	6	14.5	2	18.5								
1993	6	15.0	2	17.3								
1994	4	16.6	1	19.0								
1995	2	19.4	1	18.8								
1996	4	21.4	4	21.4								
2001	11	15.0	6	15.7								
2002	13	15.1	7	15.8								
2003	14	13.2	8	14.4	4	2.8	3	2.1	5	13.4	3.0	13.0
2004	13	14.5	7	16.8	5	2.4	4	1.8	6	13.2	4.0	10.8
2005	13	15.1	6	15.8	4	2.6	3	1.8	5	15.4	3.0	14.3
2006	13	14.7	7	16.7	4	2.5	3	1.6	5	16.2	3.0	11.7
2007	13	14.9	6	17.1	3	2.2	3	2.2	4	10.8	3.0	9.3
2008	14	14.8	8	15.7	2	1.7	2	1.7	4	12.3	3.0	10.3
2009	11	16.1	6	19.0	3	1.6	3	1.6	4	13.3	3.0	12.0
2010	10	17.7	6	18.4	3	2.4	3	2.4	4	11.5	3.0	11.0
2011	13	15.4	6	16.1	9	2.9	5	2.1	10	11.6	5.0	10.6
All Years (Weighted)		16.4		17.9		2.5		1.9		13.0		11.4
Deep, Headwater Drainage Lakes				10.8				5.0				17.0
NLF Ecoregion				8.9				5.6				21.0

Summer 2011 N: 280.0
Summer 2011 P: 9.0

Summer 2011 N:P 31 :1

Trophic State Index (TSI)

Year	TP	Chl-a	Secchi
1973			38.1
1974			38.3
1986			35.7
1987			32.3
1988			33.6
1989			32.4
1990			31.9
1991	32.2		34.4
1992	35.8		34.6
1993	24.1	36.8	35.5
1994	32.2	34.2	
1995		26.7	34.0
1996	32.2	34.1	32.9
2001			37.9
2002	38.1	30.8	36.7
2003	45.6	35.4	38.7
2004	38.1	35.4	36.6
2005	43.5	35.0	36.9
2006	39.2	34.2	36.4
2007	34.7	38.1	35.9
2008	36.9	29.3	36.4
2009	39.2	34.5	33.5
2010	36.9	38.2	34.8
2011	35.8	37.8	35.8
All Years (Weighted)	38.4	35.0	35.4
Deep, Headwater Drainage Lakes	45.0	46.4	42.8
NLF Ecoregion	48.1	47.5	45.7

	Secchi (feet)				Chlorophyll-*a* (µg/L)				Total Phosphorus (µg/L)			
	Growing Season		Summer		Growing Season		Summer		Growing Season		Summer	
Year	Count	Mean	Count	Mean	Count	Mean	Count	Mean	Count	Mean	Count	Mean
1973	1	15.0	1	15.0								
1974	2	10.9	1	14.8								
1986	7	17.2	6	17.7								
1987	8	20.4	5	22.4								
1988	6	20.0	4	20.4								
1989	7	22.4	6	22.3								
1990	5	23.7	4	23.1					2	7.0	0.0	
1991	4	17.8	2	19.4					3	5.3	1.0	7.0
1992	4	15.3	2	19.2					3	9.0	1.0	9.0
1993	3	14.9	1	18.0	3	3.4	1	1.9	3	5.3	1.0	4.0
1994					2	2.0	1	1.5	2	8.0	1.0	7.0
1995	2	19.9	1	20.0	2	1.7	1	0.7	1	8.0	0.0	
1996	2	21.5	2	21.5	2	1.4	2	1.4	1	7.0	1.0	7.0
2001	11	14.5	6	15.3								
2002	12	15.0	6	16.6	4	1.7	3	1.0	5	12.0	4.0	10.5
2003	14	12.9	8	14.4	4	2.0	3	1.6	5	15.4	3.0	17.7
2004	13	14.9	7	16.6	5	2.1	4	1.6	6	11.7	4.0	10.5
2005	13	14.5	6	16.3	4	2.2	3	1.6	5	16.6	3.0	15.3
2006	13	14.5	7	16.8	4	2.2	3	1.4	5	15.0	3.0	11.3
2007	13	15.1	6	17.5	3	2.1	3	2.1	4	10.3	3.0	8.3
2008	14	14.9	8	16.8	3	0.9	3	0.9	4	11.5	3.0	9.7
2009	11	17.2	6	20.7	3	1.5	3	1.5	4	12.8	3.0	11.3
2010	10	18.2	6	18.8	3	2.2	3	2.2	4	10.5	3.0	9.7
2011	6	16.6	4	17.6	3	2.2	2	2.1	4	10.3	2.0	9.0
All Years (Weighted)		16.3		18.1		2.0		1.6		11.3		10.7
Deep, Headwater Drainage Lakes				10.8				5.0				17.0
NLF Ecoregion				8.9				5.6				21.0

E

APPENDIX E

Watershed Analysis WiLMS Results

Date: 3/27/2012 Scenario: Two Sisters Watershed - Current

Lake Id: 1588200
Watershed Id: 0

Hydrologic and Morphometric Data

Tributary Drainage Area: 0.0 acre
Total Unit Runoff: 12.2 in.
Annual Runoff Volume: 0.0 acre-ft
Lake Surface Area <As>: 705 acre
Lake Volume <V>: 21325 acre-ft
Lake Mean Depth <z>: 30.2 ft
Precipitation - Evaporation: 5.8 in.
Hydraulic Loading: 340.8 acre-ft/year
Areal Water Load <qs>: 0.5 ft/year
Lake Flushing Rate <p>: 0.02 1/year
Water Residence Time: 62.58 year
Observed spring overturn total phosphorus (SPO): 13.0 mg/m^3
Observed growing season mean phosphorus (GSM): 10.5 mg/m^3
% NPS Change: 0%
% PS Change: 0%

NON-POINT SOURCE DATA

Land Use	Acre	Low	Most Likely	High	Loading %	Low	Most Likely	High
	(ac)	Loading (kg/ha-year)				Loading (kg/year)		
Row Crop AG	0.0	0.50	1.00	3.00	0.0	0	0	0
Mixed AG	0.0	0.30	0.80	1.40	0.0	0	0	0
Pasture/Grass	0.0	0.10	0.30	0.50	0.0	0	0	0
HD Urban (1/8 Ac)	0.0	1.00	1.50	2.00	0.0	0	0	0
MD Urban (1/4 Ac)	0.0	0.30	0.50	0.80	0.0	0	0	0
Rural Res (>1 Ac)	0.0	0.05	0.10	0.25	0.0	0	0	0
Wetlands	0.0	0.10	0.10	0.10	0.0	0	0	0
Forest	0.0	0.05	0.09	0.18	0.0	0	0	0
Lake Surface	705.0	0.10	0.30	1.00	100.0	29	86	285

POINT SOURCE DATA

Point Sources	Water Load	Low	Most Likely	High	Loading %
	(m^3/year)	(kg/year)	(kg/year)	(kg/year)	

SEPTIC TANK DATA

Description		Low	Most Likely	High	Loading %
Septic Tank Output (kg/capita-year)		0.3	0.5	0.8	
# capita-years	0.0				
% Phosphorus Retained by Soil		98	90	80	
Septic Tank Loading (kg/year)		0.00	0.00	0.00	0.0

TOTALS DATA

Description	Low	Most Likely	High	Loading %
Total Loading (lb)	62.9	188.7	629.0	100.0
Total Loading (kg)	28.5	85.6	285.3	100.0
Areal Loading (lb/ac-year)	0.09	0.27	0.89	0.0
Areal Loading (mg/m^2-year)	10.00	30.00	100.00	0.0
Total PS Loading (lb)	0.0	0.0	0.0	0.0
Total PS Loading (kg)	0.0	0.0	0.0	0.0
Total NPS Loading (lb)	0.0	0.0	0.0	100.0
Total NPS Loading (kg)	0.0	0.0	0.0	100.0

Phosphorus Prediction and Uncertainty Analysis Module

Date: 3/27/2012 Scenario: 35
Observed spring overturn total phosphorus (SPO): 13.0 mg/m^3
Observed growing season mean phosphorus (GSM): 10.5 mg/m^3
Back calculation for SPO total phosphorus: 0.0 mg/m^3
Back calculation GSM phosphorus: 0.0 mg/m^3
% Confidence Range: 70%
Nurenberg Model Input - Est. Gross Int. Loading: 0 kg

Lake Phosphorus Model	Low Total P (mg/m^3)	Most Likely Total P (mg/m^3)	High Total P (mg/m^3)	Predicted -Observed (mg/m^3)	% Dif.
Walker, 1987 Reservoir	13	38	126	28	267
Canfield-Bachmann, 1981 Natural Lake	6	11	22	1	10
Canfield-Bachmann, 1981 Artificial Lake	8	13	23	3	29
Rechow, 1979 General	1	3	8	-8	-76
Rechow, 1977 Anoxic	6	17	58	7	67
Rechow, 1977 water load<50m/year	1	3	11	-8	-76
Rechow, 1977 water load>50m/year	N/A	N/A	N/A	N/A	N/A
Walker, 1977 General	11	32	106	19	146
Vollenweider, 1982 Combined OECD	8	20	54	8	68
Dillon-Rigler-Kirchner	15	46	154	33	254
Vollenweider, 1982 Shallow Lake/Res.	6	16	46	4	34

Larsen-Mercier, 1976	8	23	76	10	77
Nurnberg, 1984 Oxic	12	35	118	25	238

Lake Phosphorus Model	**Confidence** Lower Bound	**Confidence** Upper Bound	**Parameter** Fit?	**Back** Calculation (kg/year)	**Model** Type
Walker, 1987 Reservoir	19	93	Tw	0	GSM
Canfield-Bachmann, 1981 Natural Lake	3	32	FIT	1	GSM
Canfield-Bachmann, 1981 Artificial Lake	4	37	L p	1	GSM
Rechow, 1979 General	1	6	P L qs	0	GSM
Rechow, 1977 Anoxic	9	43	FIT	0	GSM
Rechow, 1977 water load<50m/year	1	8	FIT	0	GSM
Rechow, 1977 water load>50m/year	N/A	N/A	N/A	N/A	N/A
Walker, 1977 General	14	81	FIT	0	SPO
Vollenweider, 1982 Combined OECD	9	45	FIT	0	ANN
Dillon-Rigler-Kirchner	23	114	P L qs p	0	SPO
Vollenweider, 1982 Shallow Lake/Res.	7	37	FIT	0	ANN
Larsen-Mercier, 1976	12	56	P Pin	0	SPO
Nurnberg, 1984 Oxic	16	89	qs	0	ANN

Water and Nutrient Outflow Module

Date: 3/27/2012 Scenario: 22
Average Annual Surface Total Phosphorus: 10.5mg/m^3
Annual Discharge: 3.41E+002 AF => 4.20E+005 m^3
Annual Outflow Loading: 9.3 LB => 4.2 kg

F

APPENDIX F

Aquatic Plant Survey Data

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	Brasenia schreberi	Ceratophyllum demersum	Chara spp.	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Ericaulon aquaticum	Gratiola aurea	Isoetes sp.	Juncus pelocarpus	Lobelia dortmanna	Megalodonta beckii	Myriophyllum alterniflorum	Myriophyllum heterophyllum	Myriophyllum sibiricum	Myriophyllum tenellum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Pontederia cordata	Potamogeton alpinus	Potamogeton amplifolius	Potamogeton epihydrus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton natans	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Sagittaria sp. (rosette)	Sagittaria rigida	Schoenoplectus acutus	Spirganium angustifolium	Utricularia resupinata	Vallisneria americana	Freshwater Sponge	Filamentous Algae
1	45.762543	-89.532384	1	Sand	Pole							1											1																								
2	45.762541	-89.531856	1	Muck	Pole		1	1				1														1														V								
3	45.762916	-89.533435	8	Muck	Pole							1																	1									2								
4	45.762914	-89.532908	7	Muck	Pole																																2								
5	45.762912	-89.532381	6	Muck	Pole																								1								3								
6	45.762910	-89.531853	1	Sand	Pole		V						1				1										1															1				
7	45.763288	-89.533959	6	Sand	Pole																								1								2								
8	45.763285	-89.533432	12	Muck	Pole																																2								
9	45.763283	-89.532905	12	Muck	Pole																																2								
10	45.763281	-89.532377	7	Muck	Pole							1																									2								
11	45.763659	-89.534483	1	Sand	Pole		V								1															1		1												
12	45.763657	-89.533956	10	Muck	Pole							1																									2								
13	45.763654	-89.533429	14		Rope																																									
14	45.763652	-89.532902	12	Sand	Pole							1																									2								
15	45.763650	-89.532374	8	Sand	Pole							1																									3							1	
16	45.764028	-89.534480	5	Muck	Pole		1					1						1											1								2								
17	45.764026	-89.533953	12	Muck	Pole																																2								
18	45.764023	-89.533426	16		Rope																																3								
19	45.764021	-89.532899	11	Sand	Pole							1																									2								
20	45.764019	-89.532371	9	Sand	Pole							1																								1	1	2								
21	45.763967	-89.519718	0			TEMPORARY OBSTACLE																																									
22	45.763964	-89.519190	10	Sand	Pole																																									
23	45.763962	-89.518663	1	Sand	Pole																																									
24	45.764397	-89.534477	0			TEMPORARY OBSTACLE																																									
25	45.764395	-89.533950	12	Muck	Pole																																2								
26	45.764392	-89.533423	13		Rope																																3								
27	45.764390	-89.532895	9	Sand	Pole							1																							1		3								
28	45.764388	-89.532368	9	Sand	Pole			1				1																							1	1	1								
29	45.764386	-89.531841	6	Sand	Pole							1																	1								2								
30	45.764340	-89.520769	2	Sand	Pole								1		1	1	1					1																					1			
31	45.764338	-89.520242	6	Sand	Pole				1														1																						
32	45.764336	-89.519714	16		Rope																																									
33	45.764333	-89.519187	26		Rope																																									
34	45.764331	-89.518660	24		Rope																																									
35	45.764329	-89.518133	23		Rope																																									
36	45.764327	-89.517605	13	Sand	Pole										1																														
37	45.764324	-89.517078	3	Muck	Pole								1			1																				1							1			
38	45.764766	-89.534474	7	Muck	Pole		1																1																				1		
39	45.764764	-89.533947	12	Muck	Pole							1																									2								
40	45.764761	-89.533420	12		Rope																																3								
41	45.764759	-89.532892	9	Sand	Pole			1				1																							1	1									
42	45.764757	-89.532365	8	Sand	Pole			1				1																							2	1									
43	45.764755	-89.531838	9	Sand	Pole							1						1																			3								
44	45.764753	-89.531311	4	Sand	Pole				1							1						1																				1			
45	45.764720	-89.523402	2	Sand	Pole																																								
46	45.764718	-89.522875	8	Sand	Pole																		1																						
47	45.764716	-89.522347	12	Sand	Pole				1																																				
48	45.764713	-89.521820	9	Sand	Pole																		1																		1				
49	45.764711	-89.521293	6	Sand	Pole										1							1																							
50	45.764709	-89.520766	9	Sand	Pole																		1																							
51	45.764707	-89.520238	16		Rope																																									
52	45.764705	-89.519711	29		Rope																																									
53	45.764702	-89.519184	30		Rope																																									
54	45.764700	-89.518657	32		Rope																																									
55	45.764698	-89.518129	27		Rope																																									
56	45.764696	-89.517602	19		Rope																																									
57	45.764694	-89.517075	15		Rope																																									
58	45.764691	-89.516548	9	Sand	Pole				1														1													1								
59	45.764689	-89.516021	1	Sand	Pole						1	V										1					V																		
60	45.765137	-89.534998	4	Sand	Pole		V																			V															1				
61	45.765135	-89.534471	5	Sand	Pole				2				1		1							1																							
62	45.765133	-89.533944	11	Sand	Pole								1																								2								
63	45.765130	-89.533417	13		Rope								1																								2								
64	45.765128	-89.532889	14		Rope			2					1																							1		1								
65	45.765126	-89.532362	14		Rope			2					1																																	
66	45.765124	-89.531835	13	Sand	Pole			2					1																							1	1									
67	45.765122	-89.531308	7	Sand	Pole								2																								1		1						1		
68	45.765096	-89.524981	1	Sand	Pole											1						1																							
69	45.765093	-89.524453	20		Rope																																									
70	45.765091	-89.523926	21		Rope																																									
71	45.765089	-89.523399	27		Rope																																									
72	45.765087	-89.522872	28		Rope																																									
73	45.765085	-89.522344	21		Rope																																									

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	Brasenia schreberi	Ceratophyllum demersum	Chara spp.	Elatine minima	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Ericaulon aquaticum	Gratiola aurea	Isoetes sp.	Juncus pelocarpus	Lobelia dortmanna	Megalodonta beckii	Myriophyllum alterniflorum	Myriophyllum heterophyllum	Myriophyllum sibiricum	Myriophyllum tenellum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Pontederia cordata	Potamogeton alpinus	Potamogeton amplifolius	Potamogeton epihydrus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton natans	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Sagittaria sp. (rosette)	Sagittaria rigida	Schoenoplectus acutus	Spirganium angustifolium	Utricularia resupinata	Vallisneria americana	Freshwater Sponge	Filamentous Algae
74	45.765082	-89.521817	14		Rope																																											
75	45.765080	-89.521290	17		Rope			2																																	1								
76	45.765078	-89.520763	20		Rope																																											
77	45.765076	-89.520235	0			DEEP																																										
78	45.765074	-89.519708	0			DEEP																																										
79	45.765071	-89.519181	0			DEEP																																										
80	45.765069	-89.518654	0			DEEP																																										
81	45.765067	-89.518126	0			DEEP																																										
82	45.765065	-89.517599	34		Rope																																											
83	45.765063	-89.517072	30		Rope																																											1
84	45.765060	-89.516545	25		Rope																																										
85	45.765058	-89.516017	22		Rope																																										
86	45.765056	-89.515490	12	Sand	Pole														1																						1					1		
87	45.765054	-89.514963	1	Sand	Pole																																										
88	45.765519	-89.538159	4	Muck	Pole		V																	1			V	V																		
89	45.765517	-89.537632	6	Muck	Pole		1																	1											1												
90	45.765504	-89.534468	6	Muck	Pole		V																	1																	1						
91	45.765502	-89.533941	8	Muck	Pole																																				1						
92	45.765499	-89.533413	10	Sand	Pole								2						1											1										1						
93	45.765497	-89.532886	18		Rope			1																																							
94	45.765495	-89.532359	17		Rope			2																																							
95	45.765493	-89.531832	14		Rope			1					1																										1			1						
96	45.765491	-89.531304	9	Sand	Pole			1					1																										1			1						
98	45.765467	-89.525505	3	Sand	Pole											1								1																							
99	45.765465	-89.524977	16		Rope																																										
100	45.765462	-89.524450	0			DEEP																																										
101	45.765460	-89.523923	0			DEEP																																										
102	45.765458	-89.523396	30		Rope																																										
103	45.765456	-89.522868	0			DEEP																																										
104	45.765454	-89.522341	0			DEEP																																										
105	45.765451	-89.521814	29		Rope																																										
106	45.765449	-89.521287	32		Rope																																										
107	45.765447	-89.520759	0			DEEP																																										
108	45.765445	-89.520232	0			DEEP																																										
109	45.765443	-89.519705	0			DEEP																																										
110	45.765440	-89.519178	0			DEEP																																										
111	45.765438	-89.518650	0			DEEP																																										
112	45.765436	-89.518123	0			DEEP																																										
113	45.765434	-89.517596	0			DEEP																																										
114	45.765432	-89.517069	0			DEEP																																										
115	45.765429	-89.516541	0			DEEP																																										
116	45.765427	-89.516014	0			DEEP																																										
117	45.765425	-89.515487	29		Rope																																										
118	45.765423	-89.514960	22		Rope																				1																							
119	45.765420	-89.514432	2	Sand	Pole				1														1																						1			
120	45.765888	-89.538156	6	Muck	Pole		V																	1																							
121	45.765886	-89.537628	5	Muck	Pole		V																																								
122	45.765883	-89.537101	1	Muck	Pole		1																				V																				
123	45.765873	-89.534465	0			TERRESTRIAL																																										
124	45.765871	-89.533938	2	Sand	Pole												1						1											1										1			
125	45.765868	-89.533410	2	Sand	Pole				1								1						1																						1			
126	45.765866	-89.532883	18		Rope																																		1								
127	45.765864	-89.532356	20		Rope																				1																						
128	45.765862	-89.531829	13		Rope			1																														1									
129	45.765860	-89.531301	11	Sand	Pole			1					1																											1							
130	45.765858	-89.530774	1	Sand	Pole								1																																		
131	45.765836	-89.525502	6	Sand	Pole																			1											1											
132	45.765834	-89.524974	24		Rope																																										
133	45.765832	-89.524447	0			DEEP																																										
134	45.765829	-89.523920	0			DEEP																																										
135	45.765827	-89.523393	0			DEEP																																										
136	45.765825	-89.522865	0			DEEP																																										
137	45.765823	-89.522338	0			DEEP																																										
138	45.765821	-89.521811	30		Pole																																										
139	45.765818	-89.521283	0			DEEP																																										
140	45.765816	-89.520756	0			DEEP																																										
141	45.765814	-89.520229	0			DEEP																																										
142	45.765812	-89.519702	0			DEEP																																										
143	45.765809	-89.519174	0			DEEP																																										
144	45.765807	-89.518647	0			DEEP																																										
145	45.765805	-89.518120	0			DEEP																																										
146	45.765803	-89.517593	0			DEEP																																										
147	45.765801	-89.517065	0			DEEP																																										

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	Brasenia schreberi	Ceratophyllum demersum	Chara spp.	Elatine minima	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Ericaulon aquaticum	Gratiola aurea	Isoetes sp.	Juncus pelocarpus	Lobelia dortmanna	Megalodonta beckii	Myriophyllum alterniflorum	Myriophyllum heterophyllum	Myriophyllum sibiricum	Myriophyllum tenellum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Pontederia cordata	Potamogeton alpinus	Potamogeton amplifolius	Potamogeton epihydrus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton natans	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Sagitaria sp. (rosette)	Sagittaria rigida	Schoenoplectus acutus	Spirganium angustifolium	Utricularia resupinata	Vallisneria americana	Freshwater Sponge	Filamentous Algae
148	45.765798	-89.516538	0			DEEP																																											
149	45.765796	-89.516011	0			DEEP																																											
150	45.765794	-89.515484	0			DEEP																																											
151	45.765792	-89.514956	0			DEEP																																											
152	45.765789	-89.514429	19		Rope																													1															
153	45.765787	-89.513902	1	Sand	Pole																		1											1												1			
154	45.766257	-89.538153	5	Muck	Pole																			1			V																						
155	45.766255	-89.537625	4	Muck	Pole																						V																						
156	45.766252	-89.537098	1	Sand	Pole					1		1		V		1			V						2		V	V	V																	V				
157	45.766246	-89.535516	2	Sand	Pole																		1																								1			
158	45.766244	-89.534989	2	Sand	Pole																																										1			
159	45.766242	-89.534462	7	Sand	Pole				1																1									1												1			
160	45.766240	-89.533935	8	Sand	Pole				1				1											1	1									1												1			
161	45.766237	-89.533407	7	Sand	Pole												1																													1			
162	45.766235	-89.532880	20		Rope																				1													1										
163	45.766233	-89.532353	21		Rope			1																																									
164	45.766231	-89.531826	14		Rope			1					1																								1												
165	45.766229	-89.531298	5	Sand	Pole				1														1	1									1					1		1								
166	45.766207	-89.526026	1	Sand	Pole																		1																						1			1		
167	45.766205	-89.525498	18		Rope																																												
168	45.766203	-89.524971	29		Rope																																												
169	45.766201	-89.524444	0			DEEP																																											
170	45.766198	-89.523917	0			DEEP																																											
171	45.766196	-89.523389	0			DEEP																																											
172	45.766194	-89.522862	0			DEEP																																											
173	45.766192	-89.522335	0			DEEP																																											
174	45.766190	-89.521808	0			DEEP																																											
175	45.766187	-89.521280	0			DEEP																																											
176	45.766185	-89.520753	0			DEEP																																											
177	45.766183	-89.520226	0			DEEP																																											
178	45.766181	-89.519699	0			DEEP																																											
179	45.766178	-89.519171	0			DEEP																																											
180	45.766176	-89.518644	0			DEEP																																											
181	45.766174	-89.518117	0			DEEP																																											
182	45.766172	-89.517590	0			DEEP																																											
183	45.766170	-89.517062	0			DEEP																																											
184	45.766167	-89.516535	0			DEEP																																											
185	45.766165	-89.516008	0			DEEP																																											
186	45.7661629	-89.5154805	0			DEEP																																											
187	45.7661606	-89.5149532	0			DEEP																																											
188	45.7661584	-89.514426	26		Rope																																												
189	45.7661562	-89.5138987	9	Sand	Pole																			1										1													1			
190	45.7661539	-89.5133714	2	Sand	Pole							V					1	1					1																								1			
191	45.7666258	-89.5381496	5	Muck	Pole																						V																						
192	45.7666237	-89.5376224	4	Muck	Pole		V																																										
193	45.7666215	-89.5370951	4	Muck	Pole																					V	V																						
194	45.7666194	-89.5365678	6	Sand	Pole								1																		1							1		2						1			
195	45.7666172	-89.5360406	6	Sand	Pole				1																																					1			
196	45.7666151	-89.5355133	9	Sand	Pole																			1														1		1								
197	45.766613	-89.534986	22		Rope																																												
198	45.7666108	-89.5344588	26		Rope																																												
199	45.7666087	-89.5339315	0			DEEP																																											
200	45.7666065	-89.5334042	26		Rope																																												
201	45.7666043	-89.532877	18		Rope																																												
202	45.7666022	-89.5323497	13		Rope														1						1															1									
203	45.7666	-89.5318225	8	Sand	Pole				1							1									1									1												1			
204	45.7665979	-89.5312952	1	Sand	Pole				1														1																											
205	45.7665761	-89.5260226	2	Sand	Pole																																										1			
206	45.7665739	-89.5254953	14		Rope														1						1															1									
207	45.7665717	-89.524968	0			DEEP																																											
208	45.7665695	-89.5244408	0			DEEP																																											
209	45.7665674	-89.5239135	0			DEEP																																											
210	45.7665652	-89.5233862	0			DEEP																																											
211	45.766563	-89.522859	0			DEEP																																											
212	45.7665607	-89.5223317	0			DEEP																																											
213	45.7665585	-89.5218044	0			DEEP																																											
214	45.7665563	-89.5212772	0			DEEP																																											
215	45.7665541	-89.5207499	0			DEEP																																											
216	45.7665519	-89.5202227	0			DEEP																																											
217	45.7665497	-89.5196954	0			DEEP																																											
218	45.7665475	-89.5191681	0			DEEP																																											
219	45.7665453	-89.5186409	0			DEEP																																											
220	45.766543	-89.5181136	0			DEEP																																											

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE ROPE	COMMENTS	Brasenia schreberi	Ceratophyllum demersum	Chara spp.	Elatine minima	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Ericaulon aquaticum	Gratiola aurea	Isoetes sp.	Juncus pelocarpus	Lobelia dortmanna	Megalodonta beckii	Myriophyllum alterniflorum	Myriophyllum heterophyllum	Myriophyllum sibiricum	Myriophyllum tenellum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Pontederia cordata	Potamogeton alpinus	Potamogeton amplifolius	Potamogeton epihydrus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton natans	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Sagitaria sp. (rosette)	Sagittaria rigida	Schoenoplectus acutus	Spirganium angustifolium	Utricularia resupinata	Vallisneria americana	Freshwater Sponge	Filamentous Algae
221	45.7665408	-89.5175863	0			DEEP																																										
222	45.7665386	-89.5170591	0			DEEP																																										
223	45.7665364	-89.5165318	0			DEEP																																										
224	45.7665341	-89.5160046	0			DEEP																																										
225	45.7665319	-89.5154773	0			DEEP																																										
226	45.7665296	-89.51495	0			DEEP																																										
227	45.7665274	-89.5144228	0			DEEP																																										
228	45.7665252	-89.5138955	16		Rope			1																																								1
229	45.7665229	-89.5133682	9	Sand	Pole																																		2								
230	45.7665207	-89.512841	1	Sand	Pole							V											1	1										1													
231	45.7669905	-89.5370921	3	Sand	Pole												1																														
232	45.7669884	-89.5365648	13	Muck	Pole								1																											1							
233	45.7669863	-89.5360375	20		Rope																																										
234	45.7669841	-89.5355102	31		Rope																																										
235	45.766982	-89.534983	0			DEEP																																										
236	45.7669798	-89.5344557	0			DEEP																																										
237	45.7669777	-89.5339284	0			DEEP																																										
238	45.7669755	-89.5334012	0			DEEP																																										
239	45.7669734	-89.5328739	33			DEEP																																										
240	45.7669712	-89.5323466	18		Rope																																										
241	45.766969	-89.5318194	2	Sand	Pole																																	1		1					1			
242	45.7669451	-89.5260194	3	Sand	Pole			1																1																					1			
243	45.7669429	-89.5254922	8	Sand	Pole																			1																						1		
244	45.7669408	-89.5249649	27		Rope																																										
245	45.7669386	-89.5244376	0			DEEP																																										
246	45.7669364	-89.5239104	0			DEEP																																										
247	45.7669342	-89.5233831	0			DEEP																																										
248	45.766932	-89.5228558	0			DEEP																																										
249	45.7669298	-89.5223286	0			DEEP																																										
250	45.7669276	-89.5218013	0			DEEP																																										
251	45.7669254	-89.521274	0			DEEP																																										
252	45.7669231	-89.5207468	0			DEEP																																										
253	45.7669209	-89.5202195	0			DEEP																																										
254	45.7669187	-89.5196922	0			DEEP																																										
255	45.7669165	-89.519165	0			DEEP																																										
256	45.7669143	-89.5186377	0			DEEP																																										
257	45.7669121	-89.5181104	0			DEEP																																										
258	45.7669098	-89.5175832	0			DEEP																																										
259	45.7669076	-89.5170559	0			DEEP																																										
260	45.7669054	-89.5165286	0			DEEP																																										
261	45.7669031	-89.5160014	0			DEEP																																										
262	45.7669009	-89.5154741	0			DEEP																																										
263	45.7668987	-89.5149468	0			DEEP																																										
264	45.7668964	-89.5144196	0			DEEP																																										
265	45.7668942	-89.5138923	30		Rope																																										
266	45.7668919	-89.513365	23		Rope																																										
267	45.7668897	-89.5128378	14	Sand	Pole																																		1								
268	45.7668874	-89.5123105	1	Sand	Pole																																										
269	45.7673829	-89.542889	7	Sand	Pole																																		2						1		
270	45.7673787	-89.5418344	2	Sand	Pole																			1																								
271	45.7673617	-89.5376163	3	Sand	Pole																																										
272	45.7673596	-89.537089	23		Rope																																										
273	45.7673574	-89.5365617	0			DEEP																																										
274	45.7673553	-89.5360345	0			DEEP																																										
275	45.7673531	-89.5355072	0			DEEP																																										
276	45.767351	-89.5349799	0			DEEP																																										
277	45.7673488	-89.5344526	0			DEEP																																										
278	45.7673467	-89.5339254	0			DEEP																																										
279	45.7673445	-89.5333981	0			DEEP																																										
280	45.7673424	-89.5328708	34			DEEP																																										
281	45.7673402	-89.5323436	14		Rope																				1	1														1								
282	45.7673142	-89.5260163	0			TEMPORARY OBSTACLE																																											
283	45.767312	-89.525489	7	Sand	Pole																				1																							
284	45.7673098	-89.5249618	17		Rope																					1														1							
285	45.7673076	-89.5244345	27		Rope																																										
286	45.7673054	-89.5239072	0			DEEP																																										
287	45.7673032	-89.5233799	0			DEEP																																										
288	45.767301	-89.5228527	0			DEEP																																										
289	45.7672988	-89.5223254	0			DEEP																																										
290	45.7672966	-89.5217981	0			DEEP																																										
291	45.7672944	-89.5212709	0			DEEP																																										
292	45.7672922	-89.5207436	0			DEEP																																										
293	45.7672899	-89.5202163	0			DEEP																																										

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	Brasenia schreberi	Ceratophyllum demersum	Chara spp.	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Eriocaulon aquaticum	Gratiola aurea	Isoetes sp.	Juncus pelocarpus	Lobelia dortmanna	Megalodonta beckii	Myriophyllum alterniflorum	Myriophyllum heterophyllum	Myriophyllum sibiricum	Myriophyllum tenellum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Pontederia cordata	Potamogeton alpinus	Potamogeton amplifolius	Potamogeton epihydrus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton natans	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Sagittaria sp. (rosette)	Sagittaria rigida	Schoenoplectus acutus	Spirganium angustifolium	Utricularia resupinata	Vallisneria americana	Freshwater Sponge	Filamentous Algae
294	45.7672877	-89.5196891	0			DEEP																																										
295	45.7672855	-89.5191618	0			DEEP																																										
296	45.7672833	-89.5186345	0			DEEP																																										
297	45.7672811	-89.5181072	0			DEEP																																										
298	45.7672788	-89.51758	0			DEEP																																										
299	45.7672766	-89.5170527	0			DEEP																																										
300	45.7672744	-89.5165254	0			DEEP																																										
301	45.7672722	-89.5159982	0			DEEP																																										
302	45.7672699	-89.5154709	0			DEEP																																										
303	45.7672677	-89.5149436	0			DEEP																																										
304	45.7672654	-89.5144164	0			DEEP																																										
305	45.7672632	-89.5138891	0			DEEP																																										
306	45.767261	-89.5133618	0			DEEP																																										
307	45.7672587	-89.5128346	18		Rope																																											1
308	45.7672565	-89.5123073	4	Sand	Pole																		1									1													1				
309	45.7677645	-89.5460496	4	Muck	Pole						1																																						
310	45.7677624	-89.5455224	2	Muck	Pole																		1																									
311	45.7677561	-89.5439405	1	Sand	Pole		V						1										1																					V			1				
312	45.767754	-89.5434133	10	Sand	Pole				1														1																											
313	45.7677519	-89.542886	27		Rope																																												
314	45.7677498	-89.5423587	21		Rope																																												
315	45.7677477	-89.5418314	13		Rope				1				1										1														1		1										
316	45.7677456	-89.5413042	23		Rope																																												
317	45.7677435	-89.5407769	21		Rope																																												
318	45.7677413	-89.5402496	8	Sand	Pole																		1															1		1									
319	45.7677392	-89.5397223	3	Rock	Pole																																												
320	45.7677371	-89.539195	0			DOCK																	1																										
321	45.767735	-89.5386678	3	Rock	Pole																		1									1																
322	45.7677328	-89.5381405	4	Sand	Pole				1													1	1									1													1				
323	45.7677307	-89.5376132	25		Rope																																												
324	45.7677286	-89.5370859	35			DEEP																																											
325	45.7677264	-89.5365587	0			DEEP																																											
326	45.7677243	-89.5360314	0			DEEP																																											
327	45.7677221	-89.5355041	0			DEEP																																											
328	45.76772	-89.5349768	0			DEEP																																											
329	45.7677179	-89.5344496	0			DEEP																																											
330	45.7677157	-89.5339223	0			DEEP																																											
331	45.7677136	-89.533395	0			DEEP																																											
332	45.7677114	-89.5328677	21		Rope																																												
333	45.7677092	-89.5323405	5	Rock	Pole																																												
334	45.7676832	-89.5260132	1	Sand	Pole				1	1																																	1							
335	45.767681	-89.5254859	10	Sand	Pole																		1																										
336	45.7676788	-89.5249586	19		Rope																																												
337	45.7676766	-89.5244314	22		Rope																																												
338	45.7676744	-89.5239041	0			DEEP																																											
339	45.7676722	-89.5233768	0			DEEP																																											
340	45.76767	-89.5228495	0			DEEP																																											
341	45.7676678	-89.5223223	0			DEEP																																											
342	45.7676656	-89.521795	0			DEEP																																											
343	45.7676634	-89.5212677	0			DEEP																																											
344	45.7676612	-89.5207404	0			DEEP																																											
345	45.767659	-89.5202132	0			DEEP																																											
346	45.7676567	-89.5196859	0			DEEP																																											
347	45.7676545	-89.5191586	0			DEEP																																											
348	45.7676523	-89.5186313	0			DEEP																																											
349	45.7676501	-89.5181041	0			DEEP																																											
350	45.7676479	-89.5175768	0			DEEP																																											
351	45.7676456	-89.5170495	0			DEEP																																											
352	45.7676434	-89.5165222	0			DEEP																																											
353	45.7676412	-89.515995	0			DEEP																																											
354	45.7676389	-89.5154677	0			DEEP																																											
355	45.7676367	-89.5149404	0			DEEP																																											
356	45.7676345	-89.5144132	0			DEEP																																											
357	45.7676322	-89.5138859	0			DEEP																																											
358	45.76763	-89.5133586	0			DEEP																																											
359	45.7676277	-89.5128313	21		Rope																																												
360	45.7676255	-89.5123041	8	Sand	Pole						1											1																											
361	45.7676232	-89.5117768	1	Sand	Pole																																												
362	45.7681377	-89.5471012	3	Muck	Pole																					1																						
363	45.7681356	-89.5465739	6	Muck	Pole		v																1												1													
364	45.7681336	-89.5460466	5	Muck	Pole		v		1				1																	1								3									
365	45.7681315	-89.5455194	5	Muck	Pole		V						2																									1									
366	45.768123	-89.5434102	8	Sand	Pole																																											

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE ROPE	COMMENTS	Brasenia schreberi	Ceratophyllum demersum	Chara spp.	Elatine minima	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Ericaulon aquaticum	Gratiola aurea	Isoetes sp.	Juncus pelocarpus	Lobelia dortmanna	Megalodonta beckii	Myriophyllum alterniflorum	Myriophyllum heterophyllum	Myriophyllum sibiricum	Myriophyllum tenellum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Pontederia cordata	Potamogeton alpinus	Potamogeton amplifolius	Potamogeton epihydrus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton natans	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Sagitaria sp. (rosette)	Sagittaria rigida	Schoenoplectus acutus	Spirganium angustifolium	Utricularia resupinata	Vallisneria americana	Freshwater Sponge	Filamentous Algae
367	45.7681209	-89.542883	28		Rope																																											
368	45.7681188	-89.5423557	30		Rope																																											
369	45.7681167	-89.5418284	30		Rope																																											
370	45.7681146	-89.5413011	0			DEEP																																										
371	45.7681125	-89.5407738	28		Rope																																											
372	45.7681104	-89.5402466	24		Pole																																											
373	45.7681082	-89.5397193	23		Rope																																											
374	45.7681061	-89.539192	22		Rope																																											
375	45.768104	-89.5386647	21		Rope																																											
376	45.7681019	-89.5381375	22		Rope																																											
377	45.7680997	-89.5376102	0			DEEP																																										
378	45.7680976	-89.5370829	0			DEEP																																										
379	45.7680954	-89.5365556	0			DEEP																																										
380	45.7680933	-89.5360283	0			DEEP																																										
381	45.7680912	-89.5355011	0			DEEP																																										
382	45.768089	-89.5349738	0			DEEP																																										
383	45.7680869	-89.5344465	0			DEEP																																										
384	45.7680847	-89.5339192	0			DEEP																																										
385	45.7680826	-89.5333919	34			DEEP																																										
386	45.7680804	-89.5328647	22		Rope																																											
387	45.7680783	-89.5323374	2	Sand	Pole																																											
388	45.7680522	-89.52601	1	Sand	Pole									1																															1			
389	45.76805	-89.5254828	8	Sand	Pole																			1	1									1													
390	45.7680478	-89.5249555	27		Rope																																											
391	45.7680456	-89.5244282	0			DEEP																																										
392	45.7680434	-89.5239009	0			DEEP																																										
393	45.7680412	-89.5233737	0			DEEP																																										
394	45.768039	-89.5228464	0			DEEP																																										
395	45.7680368	-89.5223191	0			DEEP																																										
396	45.7680346	-89.5217918	0			DEEP																																										
397	45.7680324	-89.5212646	0			DEEP																																										
398	45.7680302	-89.5207373	0			DEEP																																										
399	45.768028	-89.52021	0			DEEP																																										
400	45.7680258	-89.5196827	0			DEEP																																										
401	45.7680235	-89.5191554	0			DEEP																																										
402	45.7680213	-89.5186282	0			DEEP																																										
403	45.7680191	-89.5181009	0			DEEP																																										
404	45.7680169	-89.5175736	0			DEEP																																										
405	45.7680146	-89.5170463	0			DEEP																																										
406	45.7680124	-89.5165191	0			DEEP																																										
407	45.7680102	-89.5159918	0			DEEP																																										
408	45.768008	-89.5154645	0			DEEP																																										
409	45.7680057	-89.5149372	0			DEEP																																										
410	45.7680035	-89.51441	0			DEEP																																										
411	45.7680012	-89.5138827	0			DEEP																																										
412	45.767999	-89.5133554	30		Rope																																											
413	45.7679967	-89.5128281	12	Sand	Pole																			1																							
414	45.7679945	-89.5123009	6	Sand	Pole						1																																					
415	45.7679922	-89.5117736	4	Sand	Pole																																											
416	45.7685088	-89.5476255	4	Muck	Pole		1													2																												
417	45.7685068	-89.5470982	6	Muck	Pole																																											
418	45.7685047	-89.5465709	6	Muck	Pole																																										
419	45.7685026	-89.5460437	5	Muck	Pole		V													1																												
420	45.7685005	-89.5455164	4	Muck	Pole																														1													
421	45.76849	-89.54288	7	Sand	Pole																			1									1														
422	45.7684878	-89.5423527	22		Rope																																											
423	45.7684857	-89.5418254	29		Rope																																											
424	45.7684836	-89.5412981	0			DEEP																																										
425	45.7684815	-89.5407708	0			DEEP																																										
426	45.7684794	-89.5402435	0			DEEP																																										
427	45.7684773	-89.5397163	0			DEEP																																										
428	45.7684751	-89.539189	0			DEEP																																										
429	45.768473	-89.5386617	0			DEEP																																										
430	45.7684709	-89.5381344	0			DEEP																																										
431	45.7684687	-89.5376071	0			DEEP																																										
432	45.7684666	-89.5370798	0			DEEP																																										
433	45.7684645	-89.5365526	0			DEEP																																										
434	45.7684623	-89.5360253	0			DEEP																																										
435	45.7684602	-89.535498	0			DEEP																																										
436	45.768458	-89.5349707	0			DEEP																																										
437	45.7684559	-89.5344434	0			DEEP																																										
438	45.7684537	-89.5339161	35			DEEP																																										
439	45.7684516	-89.5333889	21		Rope																																											

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	Brasenia schreberi	Ceratophyllum demersum	Chara spp.	Elatine minima	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Ericaulon aquaticum	Gratiola aurea	Isoetes sp.	Juncus pelocarpus	Lobelia dortmanna	Megalodonta beckii	Myriophyllum alterniflorum	Myriophyllum heterophyllum	Myriophyllum sibiricum	Myriophyllum tenellum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Pontederia cordata	Potamogeton alpinus	Potamogeton amplifolius	Potamogeton epihydrus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton natans	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Sagittaria sp. (rosette)	Sagittaria rigida	Schoenoplectus acutus	Spirganium angustifolium	Utricularia resupinata	Vallisneria americana	Freshwater Sponge	Filamentous Algae
440	45.7684494	-89.5328616	1	Sand	Pole									1				1					1																					1			
441	45.7684212	-89.5260069	1	Sand	Pole									1			1						1															1										
442	45.768419	-89.5254796	9	Sand	Pole																			1									1				1		1								
443	45.7684168	-89.5249524	30			DEEP																																									
444	45.7684146	-89.5244251	0			DEEP																																									
445	45.7684124	-89.5238978	0			DEEP																																									
446	45.7684102	-89.5233705	0			DEEP																																									
447	45.768408	-89.5228432	0			DEEP																																									
448	45.7684058	-89.522316	0			DEEP																																									
449	45.7684036	-89.5217887	0			DEEP																																									
450	45.7684014	-89.5212614	0			DEEP																																									
451	45.7683992	-89.5207341	0			DEEP																																									
452	45.768397	-89.5202068	0			DEEP																																									
453	45.7683948	-89.5196796	0			DEEP																																									
454	45.7683926	-89.5191523	0			DEEP																																									
455	45.7683903	-89.518625	0			DEEP																																									
456	45.7683881	-89.5180977	0			DEEP																																									
457	45.7683859	-89.5175704	0			DEEP																																									
458	45.7683837	-89.5170432	0			DEEP																																									
459	45.7683814	-89.5165159	0			DEEP																																									
460	45.7683792	-89.5159886	0			DEEP																																									
461	45.768377	-89.5154613	0			DEEP																																									
462	45.7683747	-89.514934	0			DEEP																																									
463	45.7683725	-89.5144068	0			DEEP																																									
464	45.7683702	-89.5138795	0			DEEP																																									
465	45.768368	-89.5133522	33		Rope																																									
466	45.7683658	-89.5128249	17		Rope																																									
467	45.7683635	-89.5122976	13		Rope																																									
468	45.7683613	-89.5117704	7	Sand	Pole																			1																						
469	45.768359	-89.5112431	1	Sand	Pole																		1																					1			
470	45.7688779	-89.5476225	6	Muck	Pole		V	1																1														1								
471	45.7688758	-89.5470952	6	Muck	Pole																																									
472	45.7688737	-89.5465679	6	Muck	Pole																																									
473	45.768859	-89.5428769	6	Sand	Pole																		1	1																					1		
474	45.7688569	-89.5423497	7	Sand	Pole				1		1					1								1																							
475	45.7688547	-89.5418224	20		Rope																																									
476	45.7688526	-89.5412951	0			DEEP																																									
477	45.7688505	-89.5407678	0			DEEP																																									
478	45.7688484	-89.5402405	0			DEEP																																									
479	45.7688463	-89.5397132	0			DEEP																																									
480	45.7688441	-89.5391859	0			DEEP																																									
481	45.768842	-89.5386586	0			DEEP																																									
482	45.7688399	-89.5381314	0			DEEP																																									
483	45.7688378	-89.5376041	0			DEEP																																									
484	45.7688356	-89.5370768	0			DEEP																																									
485	45.7688335	-89.5365495	0			DEEP																																									
486	45.7688313	-89.5360222	0			DEEP																																									
487	45.7688292	-89.5354949	0			DEEP																																									
488	45.7688271	-89.5349676	0			DEEP																																									
489	45.7688249	-89.5344404	0			DEEP																																									
490	45.7688228	-89.5339131	29		Rope																																									
491	45.7688206	-89.5333858	2	Sand	Pole																																							1			
492	45.7687902	-89.5260038	2	Sand										1			1						1																								
493	45.768788	-89.5254765	16		Rope																																									
494	45.7687858	-89.5249492	31			DEEP																																									
495	45.7687836	-89.5244219	0			DEEP																																									
496	45.7687814	-89.5238947	0			DEEP																																									
497	45.7687793	-89.5233674	0			DEEP																																									
498	45.768777	-89.5228401	0			DEEP																																									
499	45.7687748	-89.5223128	0			DEEP																																									
500	45.7687726	-89.5217855	0			DEEP																																									
501	45.7687704	-89.5212582	0			DEEP																																									
502	45.7687682	-89.520731	0			DEEP																																									
503	45.768766	-89.5202037	0			DEEP																																									
504	45.7687638	-89.5196764	0			DEEP																																									
505	45.7687616	-89.5191491	0			DEEP																																									
506	45.7687594	-89.5186218	0			DEEP																																									
507	45.7687571	-89.5180945	0			DEEP																																									
508	45.7687549	-89.5175673	0			DEEP																																									
509	45.7687527	-89.51704	0			DEEP																																									
510	45.7687504	-89.5165127	0			DEEP																																									
511	45.7687482	-89.5159854	0			DEEP																																									
512	45.768746	-89.5154581	0			DEEP																																									

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE ROPE	COMMENTS	Brasenia schreberi	Ceratophyllum demersum	Chara spp.	Elatine minima	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Ericaulon aquaticum	Gratiola aurea	Isoetes sp.	Juncus pelocarpus	Lobelia dortmanna	Megalodonta beckii	Myriophyllum alterniflorum	Myriophyllum heterophyllum	Myriophyllum sibiricum	Myriophyllum tenellum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Pontederia cordata	Potamogeton alpinus	Potamogeton amplifolius	Potamogeton epihydrus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton natans	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Sagitaria sp. (rosette)	Sagittaria rigida	Schoenoplectus acutus	Spirganium angustifolium	Utricularia resupinata	Vallisneria americana	Freshwater Sponge	Filamentous Algae
513	45.7687437	-89.5149308	0			DEEP																																										
514	45.7687415	-89.5144036	0			DEEP																																										
515	45.7687393	-89.5138763	0			DEEP																																										
516	45.768737	-89.513349	0			DEEP																																										
517	45.7687348	-89.5128217	28		Rope																																										1
518	45.7687325	-89.5122944	18		Rope																																										
519	45.7687303	-89.5117671	23		Rope																																										
520	45.768728	-89.5112399	7	Sand	Pole																			1																						
521	45.7692469	-89.5476195	5	Muck	Pole		1		1																												1									1		
522	45.7692448	-89.5470922	6	Muck	Pole								1																		1								33								
523	45.7692427	-89.546565	6	Muck	Pole															1																										
524	45.7692301	-89.5434012	2	Sand	Pole																			1																						
525	45.769228	-89.5428739	7	Sand	Pole				1		1					1								1																						
526	45.7692259	-89.5423466	7	Sand	Pole				1															1											1										
527	45.7692238	-89.5418193	18		Rope																																2									
528	45.7692216	-89.5412921	0			DEEP																																									
529	45.7692195	-89.5407648	0			DEEP																																									
530	45.7692174	-89.5402375	0			DEEP																																									
531	45.7692153	-89.5397102	0			DEEP																																									
532	45.7692132	-89.5391829	0			DEEP																																									
533	45.769211	-89.5386556	0			DEEP																																									
534	45.7692089	-89.5381283	0			DEEP																																									
535	45.7692068	-89.537601	0			DEEP																																									
536	45.7692046	-89.5370737	0			DEEP																																									
537	45.7692025	-89.5365464	0			DEEP																																									
538	45.7692004	-89.5360192	0			DEEP																																									
539	45.7691982	-89.5354919	0			DEEP																																									
540	45.7691961	-89.5349646	0			DEEP																																									
541	45.7691939	-89.5344373	26		Rope																																										
542	45.7691918	-89.53391	8	Sand	Pole				1														1	1															1					1			
543	45.7691896	-89.5333827	2	Sand	Pole									1		1	1						1																					1			
544	45.7691592	-89.5260007	3	Sand	Pole																																									
545	45.769157	-89.5254734	21		Rope																																									
546	45.7691549	-89.5249461	0			DEEP																																									
547	45.7691527	-89.5244188	0			DEEP																																									
548	45.7691505	-89.5238915	0			DEEP																																									
549	45.7691483	-89.5233642	0			DEEP																																									
550	45.7691461	-89.5228369	0			DEEP																																									
551	45.7691439	-89.5223097	0			DEEP																																									
552	45.7691417	-89.5217824	0			DEEP																																									
553	45.7691394	-89.5212551	0			DEEP																																									
554	45.7691372	-89.5207278	0			DEEP																																									
555	45.769135	-89.5202005	0			DEEP																																									
556	45.7691328	-89.5196732	0			DEEP																																									
557	45.7691306	-89.5191459	0			DEEP																																									
558	45.7691284	-89.5186186	0			DEEP																																									
559	45.7691261	-89.5180914	0			DEEP																																									
560	45.7691239	-89.5175641	0			DEEP																																									
561	45.7691217	-89.5170368	0			DEEP																																									
562	45.7691195	-89.5165095	0			DEEP																																									
563	45.7691172	-89.5159822	0			DEEP																																									
564	45.769115	-89.5154549	0			DEEP																																									
565	45.7691128	-89.5149276	0			DEEP																																									
566	45.7691105	-89.5144003	0			DEEP																																									
567	45.7691083	-89.5138731	0			DEEP																																									
568	45.769106	-89.5133458	0			DEEP																																									
569	45.7691038	-89.5128185	30		Rope																																										
570	45.7691015	-89.5122912	18		Rope																																									
571	45.7690993	-89.5117639	28		Rope																																									
572	45.769097	-89.5112366	30		Rope																																									
573	45.7690948	-89.5107093	2	Sand	Pole				1																																				
574	45.7696138	-89.5470893	8	Muck	Pole				1																						1														
575	45.7696117	-89.546562	8	Muck	Pole																																1								
576	45.7696096	-89.5460347	4	Sand	Pole				1		1															V																				
577	45.7695991	-89.5433982	7	Sand	Pole				1															1						1									1							
578	45.769597	-89.5428709	14		Rope									1																							1		1							
579	45.7695949	-89.5423436	23		Rope																																									
580	45.7695928	-89.5418163	19		Rope																																									
581	45.7695907	-89.541289	0			DEEP																																									
582	45.7695885	-89.5407617	0			DEEP																																									
583	45.7695864	-89.5402344	0			DEEP																																									
584	45.7695843	-89.5397071	0			DEEP																																									
585	45.7695822	-89.5391799	0			DEEP																																									

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE ROPE	COMMENTS	Brasenia schreberi	Ceratophyllum demersum	Chara spp.	Elatine minima	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Ericaulon aquaticum	Gratiola aurea	Isoetes sp.	Juncus pelocarpus	Lobelia dortmanna	Megalodonta beckii	Myriophyllum alterniflorum	Myriophyllum heterophyllum	Myriophyllum sibiricum	Myriophyllum tenellum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Pontederia cordata	Potamogeton alpinus	Potamogeton amplifolius	Potamogeton epihydrus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton natans	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Sagitaria sp. (rosette)	Sagittaria rigida	Schoenoplectus acutus	Spartganium angustifolium	Utricularia resupinata	Vallisneria americana	Freshwater Sponge	Filamentous Algae
586	45.7695801	-89.5386526	0			DEEP																																										
587	45.7695779	-89.5381253	0			DEEP																																										
588	45.7695758	-89.537598	0			DEEP																																										
589	45.7695737	-89.5370707	0			DEEP																																										
590	45.7695715	-89.5365434	0			DEEP																																										
591	45.7695694	-89.5360161	0			DEEP																																										
592	45.7695672	-89.5354888	0			DEEP																																										
593	45.7695651	-89.5349615	0			DEEP																																										
594	45.7695629	-89.5344342	34			DEEP																																										
595	45.7695608	-89.5339069	18		Rope			2					1																																			
596	45.7695586	-89.5333796	2	Sand	Pole									1				1					1																							1			
597	45.7695283	-89.5259975	5	Sand	Pole																			1																								
598	45.7695261	-89.5254703	27		Rope																																										
599	45.7695239	-89.524943	0			DEEP																																										
600	45.7695217	-89.5244157	0			DEEP																																										
601	45.7695195	-89.5238884	0			DEEP																																										
602	45.7695173	-89.5233611	0			DEEP																																										
603	45.7695151	-89.5228338	0			DEEP																																										
604	45.7695129	-89.5223065	0			DEEP																																										
605	45.7695107	-89.5217792	0			DEEP																																										
606	45.7695085	-89.5212519	0			DEEP																																										
607	45.7695063	-89.5207246	0			DEEP																																										
608	45.769504	-89.5201973	0			DEEP																																										
609	45.7695018	-89.5196701	0			DEEP																																										
610	45.7694996	-89.5191428	0			DEEP																																										
611	45.7694974	-89.5186155	0			DEEP																																										
612	45.7694952	-89.5180882	0			DEEP																																										
613	45.7694929	-89.5175609	0			DEEP																																										
614	45.7694907	-89.5170336	0			DEEP																																										
615	45.7694885	-89.5165063	0			DEEP																																										
616	45.7694862	-89.515979	0			DEEP																																										
617	45.769484	-89.5154517	0			DEEP																																										
618	45.7694818	-89.5149244	0			DEEP																																										
619	45.7694795	-89.5143971	0			DEEP																																										
620	45.7694773	-89.5138699	0			DEEP																																										
621	45.769475	-89.5133426	0			DEEP																																										
622	45.7694728	-89.5128153	0			DEEP																																										
623	45.7694706	-89.512288	24		Rope																																										
624	45.7694683	-89.5117607	30		Rope																																										
625	45.769466	-89.5112334	33		Rope																																										
626	45.7694638	-89.5107061	3	Sand	Pole																		1																								
627	45.7699828	-89.5470863	1	Sand	Pole				1				1	1														V																		
628	45.7699807	-89.546559	9	Muck	Pole			1					1																	1							1		2								
629	45.7699786	-89.5460317	6	Sand	Pole								1										1												1											
630	45.7699702	-89.5439225	5	Sand	Pole				1		1													1																							
631	45.7699681	-89.5433952	23		Rope				1																																						
632	45.769966	-89.5428679	0			DEEP																																										
633	45.7699639	-89.5423406	0			DEEP																																										
634	45.7699618	-89.5418133	0			DEEP																																										
635	45.7699597	-89.541286	0			DEEP																																										
636	45.7699576	-89.5407587	0			DEEP																																										
637	45.7699554	-89.5402314	0			DEEP																																										
638	45.7699533	-89.5397041	0			DEEP																																										
639	45.7699512	-89.5391768	0			DEEP																																										
640	45.7699491	-89.5386495	0			DEEP																																										
641	45.7699469	-89.5381222	0			DEEP																																										
642	45.7699448	-89.5375949	0			DEEP																																										
643	45.7699427	-89.5370676	0			DEEP																																										
644	45.7699405	-89.5365403	0			DEEP																																										
645	45.7699384	-89.536013	0			DEEP																																										
646	45.7699362	-89.5354857	0			DEEP																																										
647	45.7699341	-89.5349584	0			DEEP																																										
648	45.769932	-89.5344311	35			DEEP																																										
649	45.7699298	-89.5339039	25		Rope																																										
650	45.7699277	-89.5333766	4	Sand	Pole																				1																						1		
651	45.7698973	-89.5259944	10	Sand	Pole																			1																								
652	45.7698951	-89.5254671	0			DEEP																																										
653	45.7698929	-89.5249398	0			DEEP																																										
654	45.7698907	-89.5244125	0			DEEP																																										
655	45.7698885	-89.5238852	0			DEEP																																										
656	45.7698863	-89.5233579	0			DEEP																																										
657	45.7698841	-89.5228307	0			DEEP																																										
658	45.7698819	-89.5223034	0			DEEP																																										

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE ROPE	COMMENTS	Brasenia schreberi	Ceratophyllum demersum	Chara spp.	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Ericaulon aquaticum	Gratiola aurea	Isoetes sp.	Juncus pelocarpus	Lobelia dortmanna	Megalodonta beckii	Myriophyllum alterniflorum	Myriophyllum heterophyllum	Myriophyllum sibiricum	Myriophyllum tenellum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Pontederia cordata	Potamogeton alpinus	Potamogeton amplifolius	Potamogeton epihydrus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton natans	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Sagitaria sp. (rosette)	Sagittaria rigida	Schoenoplectus acutus	Spirganium angustifolium	Utricularia resupinata	Vallisneria americana	Freshwater Sponge	Filamentous Algae
659	45.7698797	-89.5217761	0			DEEP																																									
660	45.7698775	-89.5212488	0			DEEP																																									
661	45.7698753	-89.5207215	0			DEEP																																									
662	45.7698731	-89.5201942	0			DEEP																																									
663	45.7698708	-89.5196669	0			DEEP																																									
664	45.7698686	-89.5191396	0			DEEP																																									
665	45.7698664	-89.5186123	0			DEEP																																									
666	45.7698642	-89.518085	0			DEEP																																									
667	45.769862	-89.5175577	0			DEEP																																									
668	45.7698597	-89.5170304	0			DEEP																																									
669	45.7698575	-89.5165031	0			DEEP																																									
670	45.7698553	-89.5159758	0			DEEP																																									
671	45.769853	-89.5154485	0			DEEP																																									
672	45.7698508	-89.5149212	0			DEEP																																									
673	45.7698486	-89.5143939	0			DEEP																																									
674	45.7698463	-89.5138667	0			DEEP																																									
675	45.7698441	-89.5133394	0			DEEP																																									
676	45.7698418	-89.5128121	35		Rope																																									
677	45.7698396	-89.5122848	23		Rope																																									
678	45.7698373	-89.5117575	25		Rope																																									1
679	45.7698351	-89.5112302	22		Rope																																									
680	45.7698328	-89.5107029	3	Sand	Pole																																	1								
681	45.7703497	-89.546556	3	Sand	Pole			1				1										1															1								
682	45.7703477	-89.5460287	14		Rope			1																																					
683	45.7703456	-89.5455014	7	Sand	Pole																																								
684	45.7703435	-89.5449741	3	Sand	Pole				1																	V																	1			
685	45.7703414	-89.5444468	6	Sand	Pole														1															1											
686	45.7703393	-89.5439195	20		Rope				1																														1							
687	45.7703371	-89.5433922	0			DEEP																																								
688	45.770335	-89.5428649	0			DEEP																																								
689	45.7703329	-89.5423376	0			DEEP																																								
690	45.7703308	-89.5418103	0			DEEP																																								
691	45.7703287	-89.541283	0			DEEP																																								
692	45.7703266	-89.5407557	0			DEEP																																								
693	45.7703245	-89.5402284	0			DEEP																																								
694	45.7703223	-89.5397011	0			DEEP																																								
695	45.7703202	-89.5391738	0			DEEP																																								
696	45.7703181	-89.5386465	0			DEEP																																								
697	45.770316	-89.5381192	0			DEEP																																								
698	45.7703138	-89.5375919	0			DEEP																																								
699	45.7703117	-89.5370646	0			DEEP																																								
700	45.7703095	-89.5365373	0			DEEP																																								
701	45.7703074	-89.53601	0			DEEP																																								
702	45.7703053	-89.5354827	0			DEEP																																								
703	45.7703031	-89.5349554	0			DEEP																																								
704	45.770301	-89.5344281	0			DEEP																																								
705	45.7702988	-89.5339008	34			DEEP																																								
706	45.7702967	-89.5333735	13		Rope																		1													1								
707	45.7702685	-89.5265186	5	Sand	Pole							1																	1								1					1		
708	45.7702663	-89.5259913	26		Rope																																								
709	45.7702641	-89.525464	0			DEEP																																								
710	45.7702619	-89.5249367	0			DEEP																																								
711	45.7702597	-89.5244094	0			DEEP																																								
712	45.7702575	-89.5238821	0			DEEP																																								
713	45.7702553	-89.5233548	0			DEEP																																								
714	45.7702531	-89.5228275	0			DEEP																																								
715	45.7702509	-89.5223002	0			DEEP																																								
716	45.7702487	-89.5217729	0			DEEP																																								
717	45.7702465	-89.5212456	0			DEEP																																								
718	45.7702443	-89.5207183	0			DEEP																																								
719	45.7702421	-89.520191	0			DEEP																																								
720	45.7702399	-89.5196637	0			DEEP																																								
721	45.7702376	-89.5191364	0			DEEP																																								
722	45.7702354	-89.5186091	0			DEEP																																								
723	45.7702332	-89.5180818	0			DEEP																																								
724	45.770231	-89.5175545	0			DEEP																																								
725	45.7702287	-89.5170272	0			DEEP																																								
726	45.7702265	-89.5164999	0			DEEP																																								
727	45.7702243	-89.5159726	0			DEEP																																								
728	45.770222	-89.5154453	0			DEEP																																								
729	45.7702198	-89.514918	0			DEEP																																								
730	45.7702176	-89.5143907	0			DEEP																																								
731	45.7702153	-89.5138634	0			DEEP																		1																					

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE ROPE	COMMENTS	Brasenia schreberi	Ceratophyllum demersum	Chara spp.	Elatine minima	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Ericaulon aquaticum	Gratiola aurea	Isoetes sp.	Juncus pelocarpus	Lobelia dortmanna	Megalodonta beckii	Myriophyllum alterniflorum	Myriophyllum heterophyllum	Myriophyllum sibiricum	Myriophyllum tenellum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Pontederia cordata	Potamogeton alpinus	Potamogeton amplifolius	Potamogeton epihydrus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton natans	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Sagitaria sp. (rosette)	Sagittaria rigida	Schoenoplectus acutus	Spirganium angustifolium	Utricularia resupinata	Vallisneria americana	Freshwater Sponge	Filamentous Algae
732	45.7702131	-89.5133361	30		Rope																																											
733	45.7702108	-89.5128089	14	Sand	Rope																			1																						1		
734	45.7702086	-89.5122816	12	Sand	Rope																			1										1					1		2								
735	45.7702063	-89.5117543	9	Sand	Rope														1					1							1									1								
736	45.7702041	-89.511227	6	Sand	Pole																																											
737	45.7702018	-89.5106997	3	Sand	Pole										1		1						1																										
738	45.7707167	-89.5460257	7	Sand	Pole				1		1													1																									
739	45.7707146	-89.5454984	14		Rope								1																											2						1		
740	45.7707125	-89.5449711	26		Rope																																											
741	45.7707104	-89.5444438	0			DEEP																																										
742	45.7707083	-89.5439165	0			DEEP																																										
743	45.7707062	-89.5433892	0			DEEP																																										
744	45.7707041	-89.5428619	0			DEEP																																										
745	45.7707019	-89.5423346	0			DEEP																																										
746	45.7706998	-89.5418073	0			DEEP																																										
747	45.7706977	-89.54128	0			DEEP																																										
748	45.7706956	-89.5407526	0			DEEP																																										
749	45.7706935	-89.5402253	0			DEEP																																										
750	45.7706914	-89.539698	0			DEEP																																										
751	45.7706892	-89.5391707	0			DEEP																																										
752	45.7706871	-89.5386434	0			DEEP																																										
753	45.770685	-89.5381161	0			DEEP																																										
754	45.7706828	-89.5375888	0			DEEP																																										
755	45.7706807	-89.5370615	0			DEEP																																										
756	45.7706786	-89.5365342	0			DEEP																																										
757	45.7706764	-89.5360069	0			DEEP																																										
758	45.7706743	-89.5354796	0			DEEP																																										
759	45.7706721	-89.5349523	0			DEEP																																										
760	45.77067	-89.534425	0			DEEP																																										
761	45.7706678	-89.5338977	0			DEEP																																										
762	45.7706657	-89.5333704	33			DEEP																																										
763	45.7706635	-89.5328431	2	Sand	Pole																																											
764	45.7706375	-89.5265155	10	Sand	Pole								1																																			
765	45.7706353	-89.5259882	0			DEEP																																										
766	45.7706331	-89.5254609	0			DEEP																																										
767	45.7706309	-89.5249336	0			DEEP																																										
768	45.7706287	-89.5244063	0			DEEP																																										
769	45.7706265	-89.523879	0			DEEP																																										
770	45.7706243	-89.5233517	0			DEEP																																										
771	45.7706221	-89.5228244	0			DEEP																																										
772	45.7706199	-89.5222971	0			DEEP																																										
773	45.7706177	-89.5217698	0			DEEP																																										
774	45.7706155	-89.5212425	0			DEEP																																										
775	45.7706133	-89.5207152	0			DEEP																																										
776	45.7706111	-89.5201879	0			DEEP																																										
777	45.7706089	-89.5196605	0			DEEP																																										
778	45.7706067	-89.5191332	0			DEEP																																										
779	45.7706044	-89.5186059	0			DEEP																																										
780	45.7706022	-89.5180786	0			DEEP																																										
781	45.7706	-89.5175513	0			DEEP																																										
782	45.7705978	-89.517024	0			DEEP																																										
783	45.7705955	-89.5164967	0			DEEP																																										
784	45.7705933	-89.5159694	0			DEEP																																										
785	45.7705911	-89.5154421	0			DEEP																																										
786	45.7705888	-89.5149148	0			DEEP																																										
787	45.7705866	-89.5143875	0			DEEP																																										
788	45.7705843	-89.5138602	0			DEEP																																										
789	45.7705821	-89.5133329	0			DEEP																																										
790	45.7705798	-89.5128056	13	Sand	Rope			3					1																											1								
791	45.7705776	-89.5122783	6	Sand	Rope																		1																									
792	45.7705753	-89.511751	5	Sand	Rope											1																															
793	45.7705731	-89.5112237	4	Sand	Rope				1		1												1																									
794	45.7705708	-89.5106964	2	Sand	Rope					1	1					1							1																						1				
795	45.7710857	-89.5460227	0			TEMPORARY OBSTACLE																																													
796	45.7710836	-89.5454954	10	Sand	Pole				1															1										1												1		
797	45.7710815	-89.5449681	30		Rope																																											
798	45.7710794	-89.5444408	0			DEEP																																										
799	45.7710773	-89.5439135	0			DEEP																																										
800	45.7710752	-89.5433862	0			DEEP																																										
801	45.7710731	-89.5428588	0			DEEP																																										
802	45.771071	-89.5423315	0			DEEP																																										
803	45.7710689	-89.5418042	0			DEEP																																										
804	45.7710667	-89.5412769	0			DEEP																																										

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE ROPE	COMMENTS	Brasenia schreberi	Ceratophyllum demersum	Chara spp.	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Eriocaulon aquaticum	Gratiola aurea	Isoetes sp.	Juncus pelocarpus	Lobelia dortmanna	Megalodonta beckii	Myriophyllum alterniflorum	Myriophyllum heterophyllum	Myriophyllum sibiricum	Myriophyllum tenellum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Pontederia cordata	Potamogeton alpinus	Potamogeton amplifolius	Potamogeton epihydrus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton natans	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Sagittaria sp. (rosette)	Sagittaria rigida	Schoenoplectus acutus	Sparganium angustifolium	Utricularia resupinata	Vallisneria americana	Freshwater Sponge	Filamentous Algae
805	45.7710646	-89.5407496	0			DEEP																																									
806	45.7710625	-89.5402223	0			DEEP																																									
807	45.7710604	-89.539695	0			DEEP																																									
808	45.7710582	-89.5391677	0			DEEP																																									
809	45.7710561	-89.5386404	0			DEEP																																									
810	45.771054	-89.5381131	0			DEEP																																									
811	45.7710519	-89.5375858	0			DEEP																																									
812	45.7710497	-89.5370585	0			DEEP																																									
813	45.7710476	-89.5365312	0			DEEP																																									
814	45.7710454	-89.5360039	0			DEEP																																									
815	45.7710433	-89.5354766	0			DEEP																																									
816	45.7710412	-89.5349492	0			DEEP																																									
817	45.771039	-89.5344219	0			DEEP																																									
818	45.7710369	-89.5338946	0			DEEP																																									
819	45.7710347	-89.5333673	33			DEEP																																									
820	45.7710326	-89.53284	6	Sand	Pole				1													1															1										
821	45.7710065	-89.5265123	5	Sand	Pole																												1														
822	45.7710043	-89.525985	0			DEEP																																									
823	45.7710021	-89.5254577	0			DEEP																																									
824	45.7709999	-89.5249304	0			DEEP																																									
825	45.7709977	-89.5244031	0			DEEP																																									
826	45.7709955	-89.5238758	0			DEEP																																									
827	45.7709933	-89.5233485	0			DEEP																																									
828	45.7709911	-89.5228212	0			DEEP																																									
829	45.7709889	-89.5222939	0			DEEP																																									
830	45.7709867	-89.5217666	0			DEEP																																									
831	45.7709845	-89.5212393	0			DEEP																																									
832	45.7709823	-89.520712	0			DEEP																																									
833	45.7709801	-89.5201847	0			DEEP																																									
834	45.7709779	-89.5196574	0			DEEP																																									
835	45.7709757	-89.5191301	0			DEEP																																									
836	45.7709735	-89.5186028	0			DEEP																																									
837	45.7709712	-89.5180755	0			DEEP																																									
838	45.770969	-89.5175482	0			DEEP																																									
839	45.7709668	-89.5170209	0			DEEP																																									
840	45.7709645	-89.5164936	0			DEEP																																									
841	45.7709623	-89.5159662	0			DEEP																																									
842	45.7709601	-89.5154389	0			DEEP																																									
843	45.7709578	-89.5149116	0			DEEP																																									
844	45.7709556	-89.5143843	0			DEEP																																									
845	45.7709534	-89.513857	0			DEEP																																									
846	45.7709511	-89.5133297	0			DEEP																																									
847	45.7709489	-89.5128024	21		Rope																																									
848	45.7709466	-89.5122751	7	Sand	Pole					1					1							1											1												1		
849	45.7709444	-89.5117478	6	Sand	Pole																																									
850	45.7709421	-89.5112205	5	Sand	Pole				1	1												1																								
851	45.7709399	-89.5106932	2	Sand	Pole				1	1																																				
852	45.7714526	-89.5454924	7	Sand	Pole				1	1		1											1										1				1		1						1		
853	45.7714505	-89.5449651	26		Rope																																									
854	45.7714484	-89.5444378	30		Rope																																									
855	45.7714463	-89.5439105	0			DEEP																																									
856	45.7714442	-89.5433831	0			DEEP																																									
857	45.7714421	-89.5428558	0			DEEP																																									
858	45.77144	-89.5423285	0			DEEP																																									
859	45.7714379	-89.5418012	0			DEEP																																									
860	45.7714358	-89.5412739	0			DEEP																																									
861	45.7714336	-89.5407466	0			DEEP																																									
862	45.7714315	-89.5402193	0			DEEP																																									
863	45.7714294	-89.539692	0			DEEP																																									
864	45.7714273	-89.5391647	0			DEEP																																									
865	45.7714251	-89.5386373	0			DEEP																																									
866	45.771423	-89.53811	0			DEEP																																									
867	45.7714209	-89.5375827	0			DEEP																																									
868	45.7714187	-89.5370554	0			DEEP																																									
869	45.7714166	-89.5365281	0			DEEP																																									
870	45.7714145	-89.5360008	0			DEEP																																									
871	45.7714123	-89.5354735	0			DEEP																																									
872	45.7714102	-89.5349462	0			DEEP																																									
873	45.771408	-89.5344189	0			DEEP																																									
874	45.7714059	-89.5338916	0			DEEP																																									
875	45.7714037	-89.5333642	24		Rope																																									
876	45.7714016	-89.5328369	20		Rope																																									
877	45.7713755	-89.5265092	0			TERRESTRIAL																																									

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	Brasenia schreberi	Ceratophyllum demersum	Chara spp.	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Eriocaulon aquaticum	Gratiola aurea	Isoetes sp.	Juncus pelocarpus	Lobelia dortmanna	Megalodonta beckii	Myriophyllum alterniflorum	Myriophyllum heterophyllum	Myriophyllum sibiricum	Myriophyllum tenellum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Pontederia cordata	Potamogeton alpinus	Potamogeton amplifolius	Potamogeton epihydrus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton natans	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Sagittaria sp. (rosette)	Sagittaria rigida	Schoenoplectus acutus	Spargunium angustifolium	Utricularia resupinata	Vallisneria americana	Freshwater Sponge	Filamentous Algae
878	45.7713733	-89.5259819	27		Rope																																										
879	45.7713711	-89.5254546	0			DEEP																																									
880	45.771369	-89.5249273	0			DEEP																																									
881	45.7713668	-89.5244	0			DEEP																																									
882	45.7713646	-89.5238727	0			DEEP																																									
883	45.7713624	-89.5233454	0			DEEP																																									
884	45.7713602	-89.5228181	0			DEEP																																									
885	45.771358	-89.5222908	0			DEEP																																									
886	45.7713558	-89.5217634	0			DEEP																																									
887	45.7713535	-89.5212361	0			DEEP																																									
888	45.7713513	-89.5207088	0			DEEP																																									
889	45.7713491	-89.5201815	0			DEEP																																									
890	45.7713469	-89.5196542	0			DEEP																																									
891	45.7713447	-89.5191269	0			DEEP																																									
892	45.7713425	-89.5185996	0			DEEP																																									
893	45.7713402	-89.5180723	0			DEEP																																									
894	45.771338	-89.517545	0			DEEP																																									
895	45.7713358	-89.5170177	0			DEEP																																									
896	45.7713336	-89.5164904	0			DEEP																																									
897	45.7713313	-89.5159631	0			DEEP																																									
898	45.7713291	-89.5154357	0			DEEP																																									
899	45.7713269	-89.5149084	0			DEEP																																									
900	45.7713246	-89.5143811	0			DEEP																																									
901	45.7713224	-89.5138538	0			DEEP																																									
902	45.7713201	-89.5133265	0			DEEP																																									
903	45.7713179	-89.5127992	0			DEEP																																									
904	45.7713156	-89.5122719	9	Sand	Pole										1																			1												
905	45.7713134	-89.5117446	6	Sand	Pole				1		1				1							1																									
906	45.7713111	-89.5112173	5	Sand	Pole				1		1				1							1																									
907	45.7713089	-89.51069	3	Sand	Pole				1		1																						1												
908	45.7718216	-89.5454894	6	Sand	Pole				1														1										1												
909	45.7718195	-89.5449621	10	Muck	Pole								1																1							1							1		
910	45.7718174	-89.5444348	23		Rope																																									
911	45.7718153	-89.5439074	0			DEEP																																									
912	45.7718132	-89.5433801	0			DEEP																																									
913	45.7718111	-89.5428528	0			DEEP																																									
914	45.771809	-89.5423255	0			DEEP																																									
915	45.7718069	-89.5417982	0			DEEP																																									
916	45.7718048	-89.5412709	0			DEEP																																									
917	45.7718027	-89.5407436	0			DEEP																																									
918	45.7718005	-89.5402162	0			DEEP																																									
919	45.7717984	-89.5396889	0			DEEP																																									
920	45.7717963	-89.5391616	26		Rope																																									
921	45.7717942	-89.5386343	9	Sand	Pole				1														1													1										
922	45.771792	-89.538107	11	Sand	Pole				1														1																							
923	45.7717899	-89.5375797	30		Rope																																									
924	45.7717878	-89.5370524	0			DEEP																																									
925	45.7717856	-89.5365251	0			DEEP																																									
926	45.7717835	-89.5359977	0			DEEP																																									
927	45.7717813	-89.5354704	0			DEEP																																									
928	45.7717792	-89.5349431	0			DEEP																																									
929	45.771777	-89.5344158	0			DEEP																																									
930	45.7717749	-89.5338885	0			DEEP																																									
931	45.7717727	-89.5333612	0			DEEP																																									
932	45.7717706	-89.5328339	0			DEEP																																									
933	45.7717684	-89.5323065	14		Rope			1					2																										1								
934	45.7717423	-89.5259788	6	Sand	Pole																		1																							
935	45.7717402	-89.5254515	24		Rope																																									
936	45.771738	-89.5249242	0			DEEP																																									
937	45.7717358	-89.5243969	0			DEEP																																									
938	45.7717336	-89.5238695	0			DEEP																																									
939	45.7717314	-89.5233422	0			DEEP																																									
940	45.7717292	-89.5228149	0			DEEP																																									
941	45.771727	-89.5222876	0			DEEP																																									
942	45.7717248	-89.5217603	0			DEEP																																									
943	45.7717226	-89.521233	0			DEEP																																									
944	45.7717204	-89.5207057	0			DEEP																																									
945	45.7717181	-89.5201784	0			DEEP																																									
946	45.7717159	-89.519651	0			DEEP																																									
947	45.7717137	-89.5191237	0			DEEP																																									
948	45.7717115	-89.5185964	0			DEEP																																									
949	45.7717093	-89.5180691	0			DEEP																																									
950	45.7717707	-89.5175418	0			DEEP																																									
951	45.7717048	-89.5170145	0			DEEP																																									
952	45.7717026	-89.5164872	0			DEEP																																									
953	45.7717003	-89.5159599	0			DEEP																																									
954	45.7716981	-89.5154326	0			DEEP																																									
955	45.7716959	-89.5149052	0			DEEP																																									
956	45.7716936	-89.5143779	0			DEEP																																									
957	45.7716914	-89.5138506	0			DEEP																																									
958	45.7716891	-89.5133233	0			DEEP																																									
959	45.7716869	-89.512796	0			DEEP																																									
960	45.7716846	-89.5122687	30		Rope																																									
961	45.7716824	-89.5117414	9	Sand	Pole										1																			1							1				
962	45.7716801	-89.5112141	6	Sand	Pole				1		1				1																														
963	45.7716779	-89.5106868	2	Rock	Pole				1		1																																		
964	45.7721906	-89.5454864	5	Sand	Pole				1		1																																		
965	45.7721885	-89.5449591	8	Sand	Pole																																1			2					
966	45.7721864	-89.5444318	22		Rope																																								
967	45.7721843	-89.5439044	0			DEEP																																									

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	Brasenia schreberi	Ceratophyllum demersum	Chara spp.	Elatine minima	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Eriocaulon aquaticum	Gratiola aurea	Isoetes sp.	Juncus pelocarpus	Lobelia dortmanna	Megalodonta beckii	Myriophyllum alterniflorum	Myriophyllum heterophyllum	Myriophyllum sibiricum	Myriophyllum tenellum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Pontederia cordata	Potamogeton alpinus	Potamogeton amplifolius	Potamogeton epihydrus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton natans	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Sagitaria sp. (rosette)	Sagittaria rigida	Schoenoplectus acutus	Sparganium angustifolium	Utricularia resupinata	Vallisneria americana	Freshwater Sponge	Filamentous Algae
968	45.7721822	-89.5433771	0			DEEP																																									
969	45.7721801	-89.5428498	0			DEEP																																									
970	45.772178	-89.5423225	0			DEEP																																									
971	45.7721758	-89.5417952	0			DEEP																																									
972	45.7721738	-89.5412679	0			DEEP																																									
973	45.7721717	-89.5407405	0			DEEP																																									
974	45.7721695	-89.5402132	0			DEEP																																									
975	45.7721674	-89.5396859	0			DEEP																																									
976	45.7721653	-89.5391586	12	Rock	Pole																			1																						
977	45.7721589	-89.5375766	5	Sand	Pole																			1																						
978	45.7721568	-89.5370493	13		Rope								2																											1						
979	45.7721546	-89.536522	0			DEEP																																								
980	45.7721525	-89.5359947	0			DEEP																																								
981	45.7721504	-89.5354674	0			DEEP																																								
982	45.7721482	-89.53494	0			DEEP																																								
983	45.7721461	-89.5344127	0			DEEP																																								
984	45.7721439	-89.5338854	0			DEEP																																								
985	45.7721418	-89.5333581	0			DEEP																																								
986	45.7721396	-89.5328308	0			DEEP																																								
987	45.7721374	-89.5323035	28		Rope																																									
988	45.7721353	-89.5317761	12	Sand	Pole																																									
989	45.7721114	-89.5259757	5	Rock	Pole																														1					1						
990	45.7721092	-89.5254483	22		Rope																																									
991	45.772107	-89.524921	28		Rope																																									
992	45.7721048	-89.5243937	23		Rope																																									
993	45.7721026	-89.5238664	0			DEEP																																									
994	45.7721004	-89.5233391	0			DEEP																																									
995	45.7720982	-89.5228118	0			DEEP																																									
996	45.772096	-89.5222845	0			DEEP																																									
997	45.7720938	-89.5217571	0			DEEP																																									
998	45.7720916	-89.5212298	0			DEEP																																									
999	45.7720894	-89.5207025	0			DEEP																																									
1000	45.7720872	-89.5201752	0			DEEP																																									
1001	45.7720849	-89.5196479	0			DEEP																																									
1002	45.7720827	-89.5191206	0			DEEP																																									
1003	45.7720805	-89.5185932	0			DEEP																																									
1004	45.7720783	-89.5180659	0			DEEP																																									
1005	45.7720761	-89.5175386	0			DEEP																																									
1006	45.7720738	-89.5170113	0			DEEP																																									
1007	45.7720716	-89.516484	0			DEEP																																									
1008	45.7720694	-89.5159567	0			DEEP																																									
1009	45.7720671	-89.5154294	0			DEEP																																									
1010	45.7720649	-89.514902	0			DEEP																																									
1011	45.7720626	-89.5143747	0			DEEP																																									
1012	45.7720604	-89.5138474	0			DEEP																																									
1013	45.7720582	-89.5133201	0			DEEP																																									
1014	45.7720559	-89.5127928	0			DEEP																																									
1015	45.7720537	-89.5122655	0			DEEP																																									
1016	45.7720514	-89.5117382	13	Sand	Pole																														1											
1017	45.7720492	-89.5112108	6	Sand	Pole																																									
1018	45.7720469	-89.5106835	2	Sand	Pole			1		1			1				1							1																					1		
1019	45.7725597	-89.5454834	4	Sand	Pole			1		1																									1											
1020	45.7725576	-89.5449561	15		Rope																																	1								
1021	45.7725555	-89.5444288	27		Rope																																									
1022	45.7725534	-89.5439014	0			DEEP																																									
1023	45.7725513	-89.5433741	0			DEEP																																									
1024	45.7725491	-89.5428468	0			DEEP																																									
1025	45.772547	-89.5423195	0			DEEP																																									
1026	45.7725449	-89.5417921	0			DEEP																																									
1027	45.7725428	-89.5412648	0			DEEP																																									
1028	45.7725407	-89.5407375	0			DEEP																																									
1029	45.7725386	-89.5402102	0			DEEP																																									
1030	45.7725364	-89.5396829	0			DEEP																																									
1031	45.7725343	-89.5391555	5	Rock	Pole																																									
1032	45.7725258	-89.5370463	12	Sand	Pole																																									
1033	45.7725237	-89.5365189	0			DEEP																																									
1034	45.7725215	-89.5359916	0			DEEP																																									
1035	45.7725194	-89.5354643	0			DEEP																																									
1036	45.7725172	-89.534937	0			DEEP																																									
1037	45.7725151	-89.5344097	0			DEEP																																									
1038	45.7725129	-89.5338823	0			DEEP																																									
1039	45.7725108	-89.533355	0			DEEP																																									
1040	45.7725086	-89.5328277	23		Rope																																									
1041	45.7725065	-89.5323004	19		Rope																																									
1042	45.7725043	-89.5317731	11		Rope			1																1													1								
1043	45.7725021	-89.5312457	14	Sand	Pole								1																										2						
1044	45.7724935	-89.5291365	7	Sand	Pole																			1			1																		
1045	45.7724913	-89.5286091	18		Rope																																									
1046	45.7724891	-89.5280818	20		Rope																																									
1047	45.7724869	-89.5275545	21		Rope																																									
1048	45.7724848	-89.5270272	17		Rope																																									
1049	45.7724826	-89.5264999	14		Rope																																									
1050	45.7724804	-89.5259725	2		Rope																																									
1051	45.7724782	-89.5254452	0			DEEP																																									
1052	45.772476	-89.5249179	0			DEEP																																									
1053	45.7724738	-89.5243906	0			DEEP																																									
1054	45.7724716	-89.5238633	0			DEEP																																									
1055	45.7724694	-89.5233359	0			DEEP																																									
1056	45.7724672	-89.5228086	0			DEEP																																									
1057	45.772465	-89.5222813	0			DEEP																																									
1058	45.7724628	-89.521754	0			DEEP																																									
1059	45.7724606	-89.5212267	0			DEEP																																									
1060	45.7724584	-89.5206993	0			DEEP																																									
1061	45.7724562	-89.520172	0			DEEP																																									
1062	45.772454	-89.5196447	0			DEEP																																									
1063	45.7724517	-89.5191174	0			DEEP																																									
1064	45.7724495	-89.5185901	0			DEEP																																									
1065	45.7724473	-89.5180628	0			DEEP																																									
1066	45.7724451	-89.5175354	0			DEEP																																									
1067	45.7724428	-89.5170081	0			DEEP																																									
1068	45.7724406	-89.5164808	0			DEEP																																									
1069	45.7724384	-89.5159535	0			DEEP																																									
1070	45.7724361	-89.5154262	0			DEEP																																									
1071	45.7724339	-89.5148988	0			DEEP																																									
1072	45.7724317	-89.5143715	0			DEEP																																									
1073	45.7724294	-89.5138442	0			DEEP																																									
1074	45.7724272	-89.5133169	0			DEEP																																									
1075	45.7724249	-89.5127896	0			DEEP																																									
1076	45.7724227	-89.5122623	0			DEEP																																									
1077	45.7724204	-89.5117349	25		Rope																				1																				
1078	45.7724182	-89.5112076	14	3	Rope			3					1																																
1079	45.7724159	-89.5106803	5	Sand	Pole																																									
1080	45.7724137	-89.510153	1	Sand	Pole				1		1		1											1	1																		1				
1081	45.7729287	-89.5454804	4	Sand	Pole																														1											
1082	45.7729266	-89.5449531	14		Rope																				1																				
1083	45.7729245	-89.5444257	0			DEEP																																									
1084	45.7729224	-89.5438984	0			DEEP																																									
1085	45.7729203	-89.5433711	0			DEEP																																									
1086	45.7729182	-89.5428438	0			DEEP																																									
1087	45.7729161	-89.5423165	0			DEEP																																									
1088	45.7729139	-89.5417891	0			DEEP																																									
1089	45.7729118	-89.5412618	0			DEEP																																									
1090	45.7729097	-89.5407345	0			DEEP																																									
1091	45.7729076	-89.5402072	0			DEEP																																									
1092	45.7729055	-89.5396798	0			DEEP																																									
1093	45.7729033	-89.5391525	11		Rope								1																										2					1		
1094	45.7728948	-89.5370432	13		Rope																																		1							
1095	45.7728927	-89.5365159	0			DEEP																																									
1096	45.7728905	-89.5359886	0			DEEP																																									
1097	45.7728884	-89.5354612	0			DEEP																																									
1098	45.7728862	-89.5349339	0			DEEP																																									
1099	45.7728841	-89.5344066	0			DEEP																																									
1100	45.7728819	-89.5338793	0			DEEP																																									
1101	45.7728798	-89.5333519	0			DEEP																																									
1102	45.7728776	-89.5328246	7	Sand	Pole				1																																					
1103	45.7728755	-89.5322973	24		Rope																																									
1104	45.7728733	-89.53177	25		Rope																																									
1105	45.7728712	-89.5312426	16		Rope																				1																				
1106	45.728691	-89.5307153	13		Rope								1																																	
1107	45.7728647	-89.5296607	3	Rock	Pole																		1																					1		
1108	45.7728625	-89.5291334	10	Sand	Pole				1													1		1	1												1									
1109	45.7728603	-89.528606	22		Rope																																									
1110	45.7728581	-89.5280787	28		Rope																																									
1111	45.772856	-89.5275514	29		Rope																																									
1112	45.7728538	-89.5270241	29		Rope																																									
1113	45.7728516	-89.5264967	0			DEEP																																									
1114	45.7728494	-89.5259694	0			DEEP																																									
1115	45.728472	-89.5254421	0			DEEP																																									
1116	45.772845	-89.5249148	0			DEEP																																									
1117	45.7728428	-89.5243874	0			DEEP																																									
1118	45.7728406	-89.5238601	0			DEEP																																									
1119	45.7728384	-89.5233328	0			DEEP																																									
1120	45.7728362	-89.5228055	0			DEEP																																									
1121	45.772834	-89.5222782	0			DEEP																																									
1122	45.7728318	-89.5217508	0			DEEP																																									
1123	45.7728296	-89.5212235	0			DEEP																																									

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	Brasenia schreberi	Ceratophyllum demersum	Chara spp.	Elatine minima	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Eriocaulon aquaticum	Gratiola aurea	Isoetes sp.	Juncus pelocarpus	Lobelia dortmanna	Megalodonta beckii	Myriophyllum alterniflorum	Myriophyllum heterophyllum	Myriophyllum sibiricum	Myriophyllum tenellum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Pontederia cordata	Potamogeton alpinus	Potamogeton amplifolius	Potamogeton epihydrus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton natans	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Sagitaria sp. (rosette)	Sagittaria rigida	Schoenoplectus acutus	Sparganium angustifolium	Utricularia resupinata	Vallisneria americana	Freshwater Sponge	Filamentous Algae
1124	45.7728274	-89.5206962	0			DEEP																																									
1125	45.7728252	-89.5201689	0			DEEP																																									
1126	45.772823	-89.5196415	0			DEEP																																									
1127	45.7728208	-89.5191142	0			DEEP																																									
1128	45.7728185	-89.5185869	0			DEEP																																									
1129	45.7728163	-89.5180596	0			DEEP																																									
1130	45.7728141	-89.5175323	0			DEEP																																									
1131	45.7728119	-89.5170049	0			DEEP																																									
1132	45.7728096	-89.5164776	0			DEEP																																									
1133	45.7728074	-89.5159503	0			DEEP																																									
1134	45.7728052	-89.515423	0			DEEP																																									
1135	45.7728029	-89.5148956	0			DEEP																																									
1136	45.7728007	-89.5143683	0			DEEP																																									
1137	45.7727984	-89.513841	0			DEEP																																									
1138	45.7727962	-89.5133137	0			DEEP																																									
1139	45.7727939	-89.5127864	0			DEEP																																									
1140	45.7727917	-89.512259	0			DEEP																																									
1141	45.7727894	-89.5117317	25		Rope																																									
1142	45.7727872	-89.5112044	19		Rope																																									
1143	45.7727849	-89.5106771	5	Sand	Pole				2		1					1							1											1												
1144	45.7727827	-89.5101498	2	Sand	Pole				1															1																					1		
1145	45.7729277	-89.5454774	8	Sand	Pole				1															1																							
1146	45.7732956	-89.5449501	28		Rope																																									
1147	45.7732935	-89.5444227	0			DEEP																																									
1148	45.7732914	-89.5438954	0			DEEP																																									
1149	45.7732893	-89.5433681	0			DEEP																																									
1150	45.7732872	-89.5428408	0			DEEP																																									
1151	45.7732851	-89.5423134	0			DEEP																																									
1152	45.773283	-89.5417861	0			DEEP																																									
1153	45.7732808	-89.5412588	0			DEEP																																									
1154	45.7732787	-89.5407314	0			DEEP																																									
1155	45.7732766	-89.5402041	0			DEEP																																									
1156	45.7732745	-89.5396768	0			DEEP																																									
1157	45.7732723	-89.5391495	26		Rope																																									
1158	45.7732702	-89.5386221	6	Rock	Pole																			1																						
1159	45.7732638	-89.5370402	3	Sand	Pole						1															1																				
1160	45.7732617	-89.5365128	14		Rope																																									
1161	45.7732595	-89.5359855	0			DEEP																																									
1162	45.7732574	-89.5354582	0			DEEP																																									
1163	45.7732553	-89.5349308	0			DEEP																																									
1164	45.7732531	-89.5344035	0			DEEP																																									
1165	45.773251	-89.5338762	0			DEEP																																									
1166	45.7732488	-89.5333489	17		Rope				1				2																																
1167	45.7732467	-89.5328215	2	Rock	Pole				1		1			1			1	1					1																							
1168	45.7732445	-89.5322942	6	Sand	Pole																									1																
1169	45.7732423	-89.5317669	25		Rope																																									
1170	45.7732402	-89.5312396	27		Rope																																									
1171	45.773238	-89.5307122	29		Rope																																									
1172	45.7732358	-89.5301849	15		Rope																																									
1173	45.7732337	-89.5296576	17		Rope																																									
1174	45.7732315	-89.5291302	18		Rope																																									
1175	45.7732293	-89.5286029	16		Rope																																									
1176	45.7732271	-89.5280756	25		Rope																																									
1177	45.773225	-89.5275483	0			DEEP																																									
1178	45.7732228	-89.5270209	0			DEEP																																									
1179	45.7732206	-89.5264936	0			DEEP																																									
1180	45.7732184	-89.5259663	0			DEEP																																									
1181	45.7732162	-89.525439	0			DEEP																																									
1182	45.773214	-89.5249116	0			DEEP																																									
1183	45.7732118	-89.5243843	0			DEEP																																									
1184	45.7732096	-89.523857	0			DEEP																																									
1185	45.7732074	-89.5233297	0			DEEP																																									
1186	45.7732052	-89.5228023	0			DEEP																																									
1187	45.773203	-89.522275	0			DEEP																																									
1188	45.7732008	-89.5217477	0			DEEP																																									
1189	45.7731986	-89.5212204	0			DEEP																																									
1190	45.7731964	-89.520693	0			DEEP																																									
1191	45.7731942	-89.5201657	0			DEEP																																									
1192	45.773192	-89.5196384	0			DEEP																																									
1193	45.7731898	-89.519111	0			DEEP																																									
1194	45.7731875	-89.5185837	0			DEEP																																									
1195	45.7731853	-89.5180564	0			DEEP																																									
1196	45.7731831	-89.5175291	0			DEEP																																									
1197	45.7731809	-89.5170017	0			DEEP																																									
1198	45.7731786	-89.5164744	0			DEEP																																									
1199	45.7731764	-89.5159471	0			DEEP																																									
1200	45.7731742	-89.5154198	0			DEEP																																									
1201	45.7731719	-89.5148924	0			DEEP																																									
1202	45.7731697	-89.5143651	0			DEEP																																									
1203	45.7731675	-89.5138378	0			DEEP																																									
1204	45.7731652	-89.5133105	0			DEEP																																									
1205	45.773163	-89.5127831	0			DEEP																																									
1206	45.7731607	-89.5122558	0			DEEP																																									
1207	45.7731585	-89.5117285	0			DEEP																																									
1208	45.7731562	-89.5112012	28		Rope																																									1
1209	45.7731539	-89.5106738	16		Rope			1	1																																				
1210	45.7731517	-89.5101465	3	Rock	Pole																																									
1211	45.773673	-89.5470564	5	Sand	Pole																																								2	
1212	45.7736709	-89.5465291	2	Sand	Pole									1									1																							
1213	45.7736688	-89.5460017	2	Sand	Pole									1			1						1	1																						
1214	45.7736667	-89.5454744	27		Rope																																									
1215	45.7736646	-89.5449471	0			DEEP																																									
1216	45.7736625	-89.5444197	0			DEEP																																									
1217	45.7736604	-89.5438924	0			DEEP																																									
1218	45.7736583	-89.5433651	0			DEEP																																									
1219	45.7736562	-89.5428377	0			DEEP																																									
1220	45.7736541	-89.5423104	0			DEEP																																									
1221	45.773652	-89.5417831	0			DEEP																																									
1222	45.7736499	-89.5412557	0			DEEP																																									
1223	45.7736477	-89.5407284	0			DEEP																																									
1224	45.7736456	-89.5402011	0			DEEP																																									
1225	45.7736435	-89.5396738	0			DEEP																																									
1226	45.7736414	-89.5391464	0			DEEP																																									
1227	45.7736392	-89.5386191	18		Rope																																									
1228	45.7736328	-89.5370371	4	Sand	Pole			1																																				
1229	45.7736307	-89.5365098	25		Rope								1																																
1230	45.7736286	-89.5359824	0			DEEP																																									
1231	45.7736264	-89.5354551	30		Rope																																									
1232	45.7736243	-89.5349278	16		Rope																																									
1233	45.7736221	-89.5344004	23		Rope																																									
1234	45.77362	-89.5338731	2	Rock	Pole																																									
1235	45.7736113	-89.5317638	11	Sand	Pole								1																																
1236	45.7736092	-89.5312365	12		Rope																																									
1237	45.773607	-89.5307091	14		Rope																				1																				
1238	45.7736049	-89.5301818	19		Rope																																									
1239	45.7736027	-89.5296545	19		Rope																																									
1240	45.7736005	-89.5291271	25		Rope																																									
1241	45.7735983	-89.5285998	28		Rope																																									
1242	45.7735962	-89.5280725	29		Rope																																									
1243	45.773594	-89.5275451	0			DEEP																																									
1244	45.7735918	-89.5270178	0			DEEP																																									
1245	45.7735896	-89.5264905	0			DEEP																																									
1246	45.7735874	-89.5259632	0			DEEP																																									
1247	45.7735852	-89.5254358	0			DEEP																																									
1248	45.773583	-89.5249085	0			DEEP																																									
1249	45.7735809	-89.5243812	0			DEEP																																									
1250	45.7735787	-89.5238538	0			DEEP																																									
1251	45.7735765	-89.5233265	0			DEEP																																									
1252	45.7735743	-89.5227992	0			DEEP																																									
1253	45.7735721	-89.5222719	0			DEEP																																									
1254	45.7735698	-89.5217445	0			DEEP																																									
1255	45.7735676	-89.5212172	0			DEEP																																									
1256	45.7735654	-89.5206899	0			DEEP																																									
1257	45.7735632	-89.5201625	0			DEEP																																									
1258	45.773561	-89.5196352	0			DEEP																																									
1259	45.7735588	-89.5191079	0			DEEP																																									
1260	45.7735566	-89.5185805	0			DEEP																																									
1261	45.7735543	-89.5180532	0			DEEP																																									
1262	45.7735521	-89.5175259	0			DEEP																																									
1263	45.7735499	-89.5169986	0			DEEP																																									
1264	45.7735477	-89.5164712	0			DEEP																																									
1265	45.7735454	-89.5159439	0			DEEP																																									
1266	45.7735432	-89.5154166	0			DEEP																																									
1267	45.7735409	-89.5148892	0			DEEP																																									
1268	45.7735387	-89.5143619	0			DEEP																																									
1269	45.7735365	-89.5138346	0			DEEP																																									
1270	45.7735342	-89.5133073	0			DEEP																																									
1271	45.773532	-89.5127799	0			DEEP																																									
1272	45.7735297	-89.5122526	0			DEEP																																									
1273	45.7735275	-89.5117253	0			DEEP																																									
1274	45.7735252	-89.5111979	0			DEEP																																									
1275	45.773523	-89.5106706	15		Pole				1															1											1											
1276	45.7735207	-89.5101433	3	Sand	Pole				1		1					1							1																							
1277	45.7740441	-89.5475807	10	Sand	Pole																			1																						
1278	45.774042	-89.5470534	21		Rope	2							2												1																				
1279	45.7740399	-89.5465261	22		Rope																																									

Point Number	LATITUDE	LONGITUDE	DEPTH	SEGMENT	POLE_ROPE	COMMENTS	Brasenia schreberi	Ceratophyllum demersum	Chara spp.	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Eriocaulon aquaticum	Gratiola aurea	Isoetes sp.	Juncus pelocarpus	Lobelia dortmanna	Megalodonta beckii	Myriophyllum alterniflorum	Myriophyllum heterophyllum	Myriophyllum sibiricum	Myriophyllum tenellum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Pontederia cordata	Potamogeton alpinus	Potamogeton amplifolius	Potamogeton epihydrus	Potamogeton bicrosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton natans	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Sagitaria sp. (rosette)	Sagittaria rigida	Schoenoplectus acutus	Sparganium angustifolium	Utricularia resupinata	Vallisneria americana	Freshwater Sponge	Filamentous Algae
1280	45.7740378	-89.5459987	24		Rope																																										
1281	45.7740357	-89.5454714	30		Rope																																										
1282	45.7740336	-89.5449441	0			DEEP																																									
1283	45.7740315	-89.5444167	0			DEEP																																									
1284	45.7740294	-89.5438894	0			DEEP																																									
1285	45.7740273	-89.5433621	0			DEEP																																									
1286	45.7740252	-89.5428347	0			DEEP																																									
1287	45.7740231	-89.5423074	0			DEEP																																									
1288	45.774021	-89.5417801	0			DEEP																																									
1289	45.7740189	-89.5412527	0			DEEP																																									
1290	45.7740168	-89.5407254	0			DEEP																																									
1291	45.7740146	-89.5401981	0			DEEP																																									
1292	45.7740125	-89.5396707	0			DEEP																																									
1293	45.7740104	-89.5391434	0			DEEP																																									
1294	45.7740083	-89.538616	0			DEEP																																									
1295	45.7740061	-89.5380887	27		Rope																																									
1296	45.774004	-89.5375614	13	Sand	Pole																																									
1297	45.7740019	-89.537034	24		Rope																																									
1298	45.7739997	-89.5365067	18		Rope																																									
1299	45.7739976	-89.5359794	12		Rope																																				1					
1300	45.7739954	-89.535452	7	Rock	Pole																		1																						
1301	45.7739933	-89.5349247	3	Sand	Pole																																									
1302	45.7739804	-89.5317607	0			TERRESTRIAL																																								
1303	45.7739782	-89.5312334	2	Sand	Pole								1										1																						
1304	45.7739717	-89.5296514	0			TEMPORARY OBSTACLE																																									
1305	45.7739695	-89.529124	24		Rope																																									
1306	45.7739674	-89.5285967	26		Rope																																									
1307	45.7739652	-89.5280694	0			DEEP																																									
1308	45.773963	-89.527542	0			DEEP																																									
1309	45.7739608	-89.5270147	0			DEEP																																									
1310	45.7739588	-89.5264874	0			DEEP																																									
1311	45.7739564	-89.52596	0			DEEP																																									
1312	45.7739543	-89.5254327	0			DEEP																																									
1313	45.7739521	-89.5249054	0			DEEP																																									
1314	45.7739499	-89.524378	0			DEEP																																									
1315	45.7739477	-89.5238507	0			DEEP																																									
1316	45.7739455	-89.5233234	0			DEEP																																									
1317	45.7739433	-89.522796	0			DEEP																																									
1318	45.7739411	-89.5222687	0			DEEP																																									
1319	45.7739389	-89.5217414	0			DEEP																																									
1320	45.7739367	-89.521214	0			DEEP																																									
1321	45.7739344	-89.5206867	0			DEEP																																									
1322	45.7739322	-89.5201594	0			DEEP																																									
1323	45.77393	-89.519632	0			DEEP																																									
1324	45.7739278	-89.5191047	0			DEEP																																									
1325	45.7739256	-89.5185774	0			DEEP																																									
1326	45.7739234	-89.51805	0			DEEP																																									
1327	45.7739211	-89.5175227	0			DEEP																																									
1328	45.7739189	-89.5169954	0			DEEP																																									
1329	45.7739167	-89.516468	0			DEEP																																									
1330	45.7739144	-89.5159407	22		Rope																																									
1331	45.7739122	-89.5154134	0			DEEP																																									
1332	45.77391	-89.514886	0			DEEP																																									
1333	45.7739077	-89.5143587	0			DEEP																																									
1334	45.7739055	-89.5138314	0			DEEP																																									
1335	45.7739032	-89.5133041	0			DEEP																																									
1336	45.773901	-89.5127767	0			DEEP																																									
1337	45.7738987	-89.5122494	0			DEEP																																									
1338	45.7738965	-89.5117221	0			DEEP																																									
1339	45.7738942	-89.5111947	31		Rope																																									
1340	45.773892	-89.5106674	20		Rope																																									
1341	45.7738897	-89.5101401	5	Sand	Pole																																							2		
1342	45.7744131	-89.5475778	6	Sand	Pole																																								
1343	45.774411	-89.5470504	22		Rope																																									
1344	45.7744089	-89.5465231	24		Rope																																									
1345	45.7744068	-89.5459957	28		Pole																																									
1346	45.7744047	-89.5454684	0			DEEP																																									
1347	45.7744026	-89.5449411	0			DEEP																																									
1348	45.7744005	-89.5444137	0			DEEP																																									
1349	45.7743984	-89.5438864	0			DEEP																																									
1350	45.7743963	-89.5433591	0			DEEP																																									
1351	45.7743942	-89.5428317	0			DEEP																																									
1352	45.7743921	-89.5423044	0			DEEP																																									
1353	45.77439	-89.541777	0			DEEP																																									
1354	45.7743879	-89.5412497	0			DEEP																																									
1355	45.7743858	-89.5407224	0			DEEP																																									
1356	45.7743836	-89.540195	0			DEEP																																									
1357	45.7743815	-89.5396677	0			DEEP																																									
1358	45.7743794	-89.5391403	0			DEEP																																									
1359	45.7743773	-89.538613	0			DEEP																																									
1360	45.7743751	-89.5380857	30		Rope																																									
1361	45.774373	-89.5375583	27		Rope																																									
1362	45.7743709	-89.537031	11	Rock	Pole							1																																	
1363	45.7743687	-89.5365037	12	Muck	Pole			1				1									1								1								1							
1364	45.7743666	-89.5359763	7	Sand	Pole							1																	1								1					1		
1365	45.7743407	-89.5296483	1	Rock	Pole																																								
1366	45.7743385	-89.5291209	24		Rope																																									
1367	45.7743364	-89.5285936	0			DEEP																																									
1368	45.7743342	-89.5280663	0			DEEP																																									
1369	45.774332	-89.5275389	0			DEEP																																									
1370	45.7743298	-89.5270116	0			DEEP																																									
1371	45.7743276	-89.5264842	0			DEEP																																									
1372	45.7743255	-89.5259569	0			DEEP																																									
1373	45.7743233	-89.5254296	0			DEEP																																									
1374	45.7743211	-89.5249022	0			DEEP																																									
1375	45.7743189	-89.5243749	0			DEEP																																									
1376	45.7743167	-89.5238476	0			DEEP																																									
1377	45.7743145	-89.5233202	0			DEEP																																									
1378	45.7743123	-89.5227929	0			DEEP																																									
1379	45.7743101	-89.5222656	0			DEEP																																									
1380	45.7743079	-89.5217382	0			DEEP																																									
1381	45.7743057	-89.5212109	0			DEEP																																									
1382	45.7743035	-89.5206835	0			DEEP																																									
1383	45.7743012	-89.5201562	0			DEEP																																									
1384	45.774299	-89.5196289	0			DEEP																																									
1385	45.7742968	-89.5191015	0			DEEP																																									
1386	45.7742946	-89.5185742	0			DEEP																																									
1387	45.7742924	-89.5180469	0			DEEP																																									
1388	45.7742901	-89.5175195	0			DEEP																																									
1389	45.7742879	-89.5169922	0			DEEP																																									
1390	45.7742857	-89.5164649	0			DEEP																																									
1391	45.7742835	-89.5159375	30		Rope																			1																						
1392	45.7742812	-89.5154102	21		Rope																																									
1393	45.774279	-89.5148828	41		Rope																																									
1394	45.7742767	-89.5143555	0			DEEP																																									
1395	45.7742745	-89.5138282	0			DEEP																																									
1396	45.7742723	-89.5133008	0			DEEP																																									
1397	45.77427	-89.5127735	0			DEEP																																									
1398	45.7742678	-89.5122462	0			DEEP																																									
1399	45.7742655	-89.5117188	0			DEEP																																									
1400	45.7742632	-89.5111915	30		Rope																																									
1401	45.774261	-89.5106642	17		Rope			3					1																																
1402	45.7742587	-89.5101368	5	Sand	Pole																																							1		
1403	45.7742821	-89.5475748	10	Sand	Pole																																								
1404	45.77478	-89.5470474	25		Rope																																									
1405	45.774778	-89.5465201	26		Rope																																									
1406	45.7747759	-89.5459928	28		Rope																																									
1407	45.7747738	-89.5454654	29		Rope																																									
1408	45.7747717	-89.5449381	30		Rope																																									
1409	45.7747696	-89.5444107	0			DEEP																																									
1410	45.7747675	-89.5438834	0			DEEP																																									
1411	45.7747654	-89.543356	0			DEEP																																									
1412	45.7747632	-89.5428287	0			DEEP																																									
1413	45.7747611	-89.5423014	0			DEEP																																									
1414	45.774759	-89.541774	28		Rope																																									
1415	45.7747569	-89.5412467	25		Rope																																									
1416	45.7747548	-89.5407193	21		Rope																																									
1417	45.7747527	-89.540192	0			DEEP																																									
1418	45.7747505	-89.5396646	0			DEEP																																									
1419	45.7747484	-89.5391373	0			DEEP																																									
1420	45.7747463	-89.53861	30		Rope																																									
1421	45.7747442	-89.5380826	0			TEMPORARY OBSTACLE																																									
1422	45.774742	-89.5375553	14		Rope																																									
1423	45.7747399	-89.5370279	10	Rock	Pole							1									1								1								1							
1424	45.7747378	-89.5365006	10	Muck	Pole																																							1		
1425	45.7747097	-89.5296452	1	Sand	Pole								1		1	1																												
1426	45.7747078	-89.5291178	24		Rope																																									
1427	45.7747054	-89.5285905	0			DEEP																																									
1428	45.7747032	-89.5280631	0			DEEP																																									
1429	45.774701	-89.5275358	0			DEEP																																									
1430	45.7746988	-89.5270085	0			DEEP																																									
1431	45.7746967	-89.5264811	0			DEEP																																									
1432	45.7746945	-89.5259538	0			DEEP																																									
1433	45.7746923	-89.5254264	0			DEEP																																									
1434	45.7746901	-89.5248991	0			DEEP																																									
1435	45.7746879	-89.5243718	0			DEEP																																									

Point Number	LATITUDE	LONGITUDE	DEPTH	SEGMENT	POLE_ROPE	COMMENTS	Brasenia schreberi	Ceratophyllum demersum	Chara spp.	Elatine minima	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Ericaulon aquaticum	Gratiola aurea	Isoetes sp.	Juncus pelocarpus	Lobelia dortmanna	Megalodonta beckii	Myriophyllum alterniflorum	Myriophyllum heterophyllum	Myriophyllum sibiricum	Myriophyllum tenellum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Pontederia cordata	Potamogeton alpinus	Potamogeton amplifolius	Potamogeton epihydrus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton natans	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Sagitaria sp. (rosette)	Sagittaria rigida	Schoenoplectus acutus	Sparganium angustifolium	Utricularia resupinata	Vallisneria americana	Freshwater Sponge	Filamentous Algae
1436	45.7746857	-89.5238444	0			DEEP																																									
1437	45.7746835	-89.5233171	0			DEEP																																									
1438	45.7746813	-89.5227897	0			DEEP																																									
1439	45.7746791	-89.5222624	0			DEEP																																									
1440	45.7746769	-89.5217351	0			DEEP																																									
1441	45.7746747	-89.5212077	0			DEEP																																									
1442	45.7746725	-89.5206804	0			DEEP																																									
1443	45.7746703	-89.520153	0			DEEP																																									
1444	45.774668	-89.5196257	0			DEEP																																									
1445	45.7746658	-89.5190984	0			DEEP																																									
1446	45.7746636	-89.518571	0			DEEP																																									
1447	45.7746614	-89.5180437	0			DEEP																																									
1448	45.7746592	-89.5175163	0			DEEP																																									
1449	45.7746569	-89.516989	0			DEEP																																									
1450	45.7746547	-89.5164617	29		Rope																				1																						
1451	45.7746525	-89.5159343	27		Rope																				1																						
1452	45.7746502	-89.515407	21		Rope																																									
1453	45.774648	-89.5148796	14		Rope			2	1				1											1													1			1						
1454	45.7746458	-89.5143523	0			DEEP																																									
1455	45.7746435	-89.513825	0			DEEP																																									
1456	45.7746413	-89.5132976	0			DEEP																																									
1457	45.774639	-89.5127703	0			DEEP																																									
1458	45.7746368	-89.512243	0			DEEP																																									
1459	45.7746345	-89.5117156	0			DEEP																																									
1460	45.7746323	-89.5111883	0			DEEP																																									
1461	45.77463	-89.5106609	24		Rope																																									
1462	45.7746277	-89.5101336	3	Sand	Pole																																							1		1		
1463	45.7751491	-89.5470445	24		Rope																																									
1464	45.775147	-89.5465171	27		Rope																																										
1465	45.7751449	-89.5459898	28		Rope																																									
1466	45.7751428	-89.5454624	26		Rope																																									
1467	45.7751407	-89.5449351	17		Rope																																									
1468	45.7751386	-89.5444077	24		Rope																																									
1469	45.7751365	-89.5438804	0			DEEP																																									
1470	45.7751344	-89.543353	0			DEEP																																									
1471	45.7751323	-89.5428257	0			DEEP																																									
1472	45.7751302	-89.5422983	27		Rope																																									
1473	45.775128	-89.541771	16		Rope																																									
1474	45.7751258	-89.5412436	8	Sand	Pole				1		1												1	1									1			1		1							
1475	45.7751238	-89.5407163	21		Rope																																									
1476	45.7751217	-89.540189	16		Rope																																									
1477	45.7751196	-89.5396616	19		Rope																																									
1478	45.7751174	-89.5391343	18		Rope																																									
1479	45.7751153	-89.5386069	11	Sand	Pole																			1									1				1							
1480	45.7751089	-89.5370249	8	Muck	Pole								1									1								1					1		2							
1481	45.7751068	-89.5364975	5	Sand	Pole				1														1									1												
1482	45.7750766	-89.5291147	14		Rope																																									
1483	45.7750744	-89.5285874	0			DEEP																																									
1484	45.7750722	-89.52806	0			DEEP																																									
1485	45.77507	-89.5275327	0			DEEP																																									
1486	45.7750679	-89.5270053	0			DEEP																																									
1487	45.7750657	-89.526478	0			DEEP																																									
1488	45.7750635	-89.5259507	0			DEEP																																									
1489	45.7750613	-89.5254233	25		Rope																				1																						
1490	45.7750591	-89.524896	20		Rope																				1																						
1491	45.7750569	-89.5243686	20		Rope			1																																							
1492	45.7750547	-89.5238413	24		Rope																				1																						
1493	45.7750525	-89.5233139	25		Rope																																										
1494	45.7750503	-89.5227866	15		Rope																																					2					
1495	45.7750481	-89.5222592	25		Rope																				1																						
1496	45.7750459	-89.5217319	0			DEEP																																									
1497	45.7750437	-89.5212046	0			DEEP																																									
1498	45.7750415	-89.5206772	0			DEEP																																									
1499	45.7750393	-89.5201499	0			DEEP																																									
1500	45.7750371	-89.5196225	0			DEEP																																									
1501	45.7750348	-89.5190952	0			DEEP																																									
1502	45.7750326	-89.5185678	0			DEEP																																									
1503	45.7750304	-89.5180405	28		Rope																				1																						
1504	45.7750282	-89.5175132	0			DEEP																																									
1505	45.7750259	-89.5169858	0			DEEP																																									
1506	45.7750237	-89.5164585	24		Rope																																									
1507	45.7750215	-89.5159311	16		Rope																																									
1508	45.7750192	-89.5154038	25		Rope																				1																						
1509	45.775017	-89.5148764	24		Rope																				1																						
1510	45.7750148	-89.5143491	0			DEEP																																									
1511	45.7750125	-89.5138218	0			DEEP																																									
1512	45.7750103	-89.5132944	0			DEEP																																									
1513	45.775008	-89.5127671	0			DEEP																																									
1514	45.7750058	-89.5122397	0			DEEP																																									
1515	45.7750035	-89.5117124	0			DEEP																																									
1516	45.7750013	-89.5111851	0			DEEP																																									
1517	45.774999	-89.5106577	29		Rope																																									
1518	45.7749968	-89.5101304	10	Sand	Pole																																					2				
1519	45.7755181	-89.5470415	5	Sand	Pole																				1																						
1520	45.775516	-89.5465141	24		Rope								1																																		
1521	45.7755139	-89.5459868	22		Pole								1																																		
1522	45.7755118	-89.5454594	7	Sand	Pole				1										1						1									1												
1523	45.7755097	-89.5449321	7	Sand	Pole				1																1																				1		
1524	45.7755076	-89.5444047	11	Sand	Pole																																	1								
1525	45.7755055	-89.5438774	20		Pole																																									
1526	45.7755034	-89.54335	23		Rope																																									
1527	45.7755013	-89.5428227	21		Rope																																									
1528	45.7754992	-89.5422953	13		Rope																				2																						
1529	45.7754971	-89.541768	6	Sand	Pole								1												1																				1		
1530	45.7754949	-89.5412406	2	Sand	Pole																																								2		
1531	45.7754928	-89.5407133	3	Rock	Pole																																									
1532	45.7754907	-89.5401859	10	Muck	Pole			1					1																								1			1						
1533	45.7754886	-89.5396586	6	Rock	Pole																			1																				1		
1534	45.7754864	-89.5391312	6	Sand	Pole																																									
1535	45.7754456	-89.5291116	4	Sand	Pole											1									1									1											1		
1536	45.7754434	-89.5285843	27		Rope																																									
1537	45.7754412	-89.5280569	0			DEEP																																									
1538	45.7754391	-89.5275296	0			DEEP																																									
1539	45.7754369	-89.5270022	0			DEEP																																									
1540	45.7754347	-89.5264749	29		Rope																																									
1541	45.7754325	-89.5259475	23		Rope																																									
1542	45.7754303	-89.5254202	14		Rope																				1																						
1543	45.7754281	-89.5248928	13		Rope																				1																						
1544	45.7754259	-89.5243655	13	Sand	Pole																																									
1545	45.7754237	-89.5238381	22		Rope																				1																						
1546	45.7754215	-89.5233108	15		Rope																																									
1547	45.7754193	-89.5227834	6	Rock	Pole				1										1						1									1												
1548	45.7754171	-89.5222561	18		Rope																																	1									
1549	45.7754149	-89.5217288	0			DEEP																																									
1550	45.7754127	-89.5212014	0			DEEP																																									
1551	45.7754105	-89.5206741	0			DEEP																																									
1552	45.7754083	-89.5201467	0			DEEP																																									
1553	45.7754061	-89.5196194	0			DEEP																																									
1554	45.7754039	-89.519092	0			DEEP																																									
1555	45.7754016	-89.5185647	25		Rope																				1																						
1556	45.7753994	-89.5180373	19		Rope																				2																						
1557	45.753972	-89.51751	22		Rope																				2																						
1558	45.775395	-89.5169826	15	Sand	Pole																																									
1559	45.7753927	-89.5164553	2	Rock	Pole									1																																
1560	45.7753905	-89.5159279	1	Rock	Pole							1		1					1																												
1561	45.7753883	-89.5154006	19		Rope																																	1									
1562	45.775386	-89.5148732	20		Rope																				1															2					
1563	45.7753838	-89.5143459	27		Rope																				1																						
1564	45.7753815	-89.5138186	25		Rope																				1																						
1565	45.7753793	-89.5132912	24		Rope																				2																						
1566	45.7753771	-89.5127639	0			DEEP																																									
1567	45.7753748	-89.5122365	0			DEEP																																									
1568	45.7753725	-89.5117092	0			DEEP																																									
1569	45.7753703	-89.5111818	0			DEEP																																									
1570	45.775368	-89.5106545	0			DEEP																																									
1571	45.7753658	-89.5101271	27		Rope																																									
1572	45.7753635	-89.5095998	1	Sand	Pole											1																													1		
1573	45.775885	-89.5465111	1	Sand	Pole	V										1							1																								
1574	45.7758768	-89.5440017	1	Sand	Pole									1									1																						1		
1575	45.7758745	-89.5438744	6	Sand	Pole				1																1																						
1576	45.7758724	-89.543347	13	Sand	Pole			1					1																																		
1577	45.7758703	-89.5428197	10	Sand	Pole								1																											1	2						
1578	45.7758597	-89.5401829	0			SHALLOW																																									
1579	45.7758576	-89.5396555	1	Sand	Pole																																								1		
1580	45.7758146	-89.5291085	3	Sand	Pole																				1																						
1581	45.7758124	-89.5285812	28		Rope																																									
1582	45.7758103	-89.5280538	21		Rope																																									
1583	45.7758081	-89.5275265	25		Rope																																									
1584	45.7758059	-89.5269991	27		Rope																				1																						
1585	45.7758037	-89.5264718	20		Rope																																									
1586	45.7758015	-89.5259444	9	Sand	Pole																				1																						
1587	45.7757993	-89.525417	7	Rock	Pole				1																1															1						
1588	45.7757971	-89.5248897	12	Sand	Pole			2					1																																		
1589	45.775795	-89.5243623	9	Sand	Pole								2												1													1		1						
1590	45.7757928	-89.523835	10	Sand	Pole								1																		1								1							
1591	45.7757906	-89.5233076	6	Sand	Pole				1																									1											1		

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	Brasenia schreberi	Ceratophyllum demersum	Chara spp.	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Eriocaulon aquaticum	Gratiola aurea	Isoetes sp.	Juncus pelocarpus	Lobelia dortmanna	Megalodonta beckii	Myriophyllum alterniflorum	Myriophyllum heterophyllum	Myriophyllum sibiricum	Myriophyllum tenellum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Pontederia cordata	Potamogeton alpinus	Potamogeton amplifolius	Potamogeton ephydrus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton natans	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Sagittaria sp. (rosette)	Sagittaria rigida	Schoenoplectus acutus	Sparganium angustifolium	Utricularia resupinata	Vallisneria americana	Freshwater Sponge	Filamentous Algae
1592	45.7757884	-89.5227803	6	Sand	Pole				1								1					1																											
1593	45.7757862	-89.5222529	15	Sand	Pole																																												
1594	45.7757839	-89.5217256	0			DEEP																																										
1595	45.7757817	-89.5211982	0			DEEP																																										
1596	45.7757795	-89.5206709	0			DEEP																																										
1597	45.7757773	-89.5201435	0			DEEP																																										
1598	45.7757751	-89.5196162	0			DEEP																																										
1599	45.7757729	-89.5190888	28		Rope																			1																								
1600	45.7757707	-89.5185615	17		Rope			1				1											1	1														1								1			
1601	45.7757684	-89.5180341	10	Sand	Pole			1	1			1						1					1														1		1								
1602	45.7757662	-89.5175068	12		Rope				1														1																1								
1603	45.775764	-89.5169794	1	Sand	Pole				1	1	1					1																			1									1			
1604	45.775755	-89.51487	3	Sand	Pole						1			1	1	1	1																														
1605	45.7757528	-89.5143427	10	Sand	Pole										1								1																								
1606	45.7757506	-89.5138153	13		Rope																																										
1607	45.7757483	-89.513288	18		Rope																			1																								
1608	45.7757461	-89.5127607	22		Rope																			1																								
1609	45.7757438	-89.5122333	27		Rope																			1																								
1610	45.7757416	-89.511706	28		Rope																			1																								
1611	45.7757393	-89.5111786	28																																													
1612	45.7757371	-89.5106513	28		Rope																																										
1613	45.7757348	-89.5101239	26		Rope																																										
1614	45.7757325	-89.5095966	15	Sand	Pole			1				1																											2								
1615	45.7761836	-89.5291054	20		Rope																																									
1616	45.7761815	-89.528578	28		Rope																																									
1617	45.7761793	-89.5280507	26		Rope																			1																								
1618	45.7761771	-89.5275233	27		Rope																			1																								
1619	45.7761749	-89.526996	19		Rope																																										
1620	45.7761727	-89.5264686	7	Sand	Pole				1														1																								
1621	45.7761705	-89.5259413	4	Sand	Pole				1																																					
1622	45.7761684	-89.5254139	4	Sand	Pole									1																																
1623	45.7761662	-89.5248866	4	Sand	Pole																																									1		
1624	45.776164	-89.5243592	0			TEMPORARY OBSTACLE																																											
1625	45.7761618	-89.5238319	2	Sand	Pole				1						1		1																											V				
1626	45.7761596	-89.5233045	3	Sand	Pole				1					1								1															1											
1627	45.7761574	-89.5227771	7	Sand	Pole						1												1														1											
1628	45.7761552	-89.5222498	13		Rope																		1														1		1		1						
1629	45.776153	-89.5217224	0			DEEP																																										
1630	45.7761508	-89.5211951	0			DEEP																																										
1631	45.7761485	-89.5206677	0			DEEP																																										
1632	45.7761463	-89.5201404	0			DEEP																																										
1633	45.7761441	-89.519613	21		Rope																			1																								
1634	45.7761419	-89.5190857	13		Rope																		1														1		2							1		
1635	45.7761397	-89.5185583	7	Sand	Pole				1														2														1									1		
1636	45.7761374	-89.518031	2	Rock	Pole				1						1																																
1637	45.7761352	-89.5175036	3	Sand	Pole																	1																							1		
1638	45.7761196	-89.5138121	1	Sand	Pole					1			1			1																			1										1		
1639	45.7761173	-89.5132848	2	Rock	Pole						1		1																												1						
1640	45.7761151	-89.5127574	6	Sand	Pole				1																																						
1641	45.7761128	-89.5122301	10	Sand	Pole			2				1																									1		1								
1642	45.7761106	-89.5117027	20		Rope			1															2													1		1								
1643	45.7761083	-89.5111754	24		Rope																			2																							
1644	45.7761061	-89.510648	25		Rope																			2																							
1645	45.7761038	-89.5101207	22		Rope			1													1			2												1										
1646	45.7761015	-89.5095933	24		Rope																																										
1647	45.7760993	-89.509066	6	Sand	Pole																									2																
1648	45.7765548	-89.5296297	1	Sand	Pole																																									
1649	45.7765526	-89.5291023	22		Rope																																										
1650	45.7765505	-89.5285749	23		Rope																			1																							
1651	45.7765483	-89.5280476	25		Rope																			1																							
1652	45.7765461	-89.5275202	21		Rope																																										
1653	45.7765439	-89.5269929	3	Sand	Pole										1	1																				1										
1654	45.776533	-89.5243561	0			TEMPORARY OBSTACLE																																										
1655	45.7765308	-89.5238287	1	Sand	Pole						V					1	1					1																					V		1		
1656	45.7765286	-89.5233014	2	Sand	Pole																																								1		
1657	45.7765264	-89.522774	8	Sand	Pole																		1																							
1658	45.7765242	-89.5222466	22		Rope																			1																							
1659	45.776522	-89.5217193	0			DEEP																																										
1660	45.7765198	-89.5211919	0			DEEP																																										
1661	45.7765176	-89.5206646	0			DEEP																																										
1662	45.7765153	-89.5201372	0			DEEP																																										
1663	45.7765131	-89.5196099	15		Rope																			1																							
1664	45.7765109	-89.5190825	6	Sand	Pole																			1																						1		
1665	45.7765087	-89.5185551	2	Rock	Pole				1	1	1						1					1																								
1666	45.7764796	-89.5116995	1	Sand	Pole						1											1																						1		
1667	45.7764773	-89.5111722	7	Sand	Pole																		1														1									
1668	45.7764751	-89.5106448	7	Rock	Pole																		1						1									1								
1669	45.7764728	-89.5101174	6	Rock	Pole																								1								2									
1670	45.7764706	-89.5095901	17		Rope																																										
1671	45.7764683	-89.5090627	22		Rope																																										
1672	45.776466	-89.5085354	5	Sand	Pole			1															1						1								1									
1673	45.776926	-89.5301539	1	Sand	Pole		V										1						1				V									1						V				
1674	45.7769238	-89.5296265	7	Sand	Pole																		1													1		1								
1675	45.7769217	-89.5290992	14		Rope		1																1	1																							
1676	45.7769195	-89.5285718	16		Rope																																										
1677	45.7769173	-89.5280445	9	Sand	Pole							1												1														1									
1678	45.7768976	-89.5232982	1	Sand	Pole																	1																					1		1		
1679	45.7768954	-89.5227709	14		Rope																																		1								
1680	45.7768932	-89.5222435	21		Rope																			2																							
1681	45.776891	-89.5217161	24		Rope																			2																							
1682	45.7768888	-89.5211888	22		Rope																			2																							
1683	45.7768866	-89.5206614	23		Rope																																										
1684	45.7768844	-89.520134	26		Rope																			1																							
1685	45.7768821	-89.5196067	16		Rope							1																									1		2							1		
1686	45.7768799	-89.5190793	1	Sand	Pole				1	1												1																								
1687	45.7768441	-89.5106416	1	Sand	Pole															1																											
1688	45.7768418	-89.5101142	1	Rock	Pole								1																																		
1689	45.7768396	-89.5095869	0			TERRESTRIAL																																										
1690	45.7768373	-89.5090595	2	Rock	Pole					1	1					1																					1										
1691	45.776835	-89.5085321	19		Rope																			1																							
1692	45.7768328	-89.5080048	8	Muck	Pole							1																											2	1								
1693	45.777295	-89.5301508	1	Sand	Pole								1																																		
1694	45.7772928	-89.5296234	3	Sand	Pole				2	1					1								1																								
1695	45.7772907	-89.5290961	5	Sand	Pole																		1														1									
1696	45.7772885	-89.5285687	6		Pole			1	1			1										1														1		3	1							
1697	45.7772863	-89.5280414	3	Sand	Pole			2																																						
1698	45.7772666	-89.5232951	1	Sand	Pole										1	1																										1		1		
1699	45.7772644	-89.5227677	15		Rope																																	2								
1700	45.7772622	-89.5222403	22		Rope																			1																							
1701	45.77726	-89.521713	24		Rope																			2																							
1702	45.7772578	-89.5211856	17		Rope			1																															1								
1703	45.7772556	-89.5206582	10	Sand	Pole													1					1														1		1								
1704	45.7772534	-89.5201309	17		Rope																			1																							
1705	45.7772512	-89.5196035	12	Sand	Pole			1				1																									1		1								
1706	45.7772041	-89.5085289	1	Sand	Pole				1		1		1		1							1	1																				1				
1707	45.7772018	-89.5080015	6	Muck	Pole													1												1								3								
1708	45.7771995	-89.5074742	5	Sand	Pole													1												1								2								
1709	45.7776619	-89.5296203	4	Sand	Pole				1		1					1							1														1							1			
1710	45.7776597	-89.529093	6	Sand	Pole							1										1								1								1	1						1		
1711	45.7776575	-89.5285656	6	Sand	Pole			1				1																									1		1	3							
1712	45.7776553	-89.5280382	5	Sand	Pole			1	1			1										1								1									1							
1713	45.7776334	-89.5227646	11		Rope																																		2								
1714	45.7776312	-89.5222372	22		Pole																			2																							
1715	45.777629	-89.5217098	22		Rope																			1																							
1716	45.7776268	-89.5211825	15	Sand	Pole			1																													1		2								
1717	45.7776246	-89.5206551	7	Sand	Pole																		2																	1							
1718	45.7776224	-89.5201277	7	Sand	Pole				1						1														1															1	1	
1719	45.7776202	-89.5196004	4	Sand	Pole				1		1				1																													1		
1720	45.7775685	-89.5074709	2	Muck	Pole			1	1			1											1		1			1		1									1							
1721	45.7775663	-89.5069436	2	Sand	Pole			1				1											1		1			1											1							
1722	45.7780287	-89.5290899	6	Sand	Pole		V					1										1						1									3									
1723	45.7780265	-89.5285625	5	Sand	Pole		1	1				1										1						1																		
1724	45.7780042	-89.5232888	1	Sand	Pole																				1		V																		
1725	45.7780024	-89.5227614	10	Muck	Pole							1					1					1																	1								
1726	45.7780002	-89.522234	15		Rope			3	1																																					
1727	45.777998	-89.5217067	14		Rope			1																1															2							
1728	45.7779958	-89.5211793	5	Sand	Pole																																								1		
1729	45.7779936	-89.5206519	2	Sand	Pole				1	1	1		1		1		1					1														1		1								
1730	45.7779914	-89.5201246	1	Sand	Pole								1									1																								
1731	45.7783737	-89.5232856	1	Muck	Pole		1																		V		V																		
1732	45.7783715	-89.5227583	6	Muck	Pole																			1						1						1		2								
1733	45.7783693	-89.5222309	10	Muck	Pole							1																										2									
1734	45.7783671	-89.5217035	2	Sand	Pole				1		1					1						1																							1		
1735	45.7783648	-89.5211761	1	Sand	Pole					1	1	1			1												V																		

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APPENDIX G

Oneida County Shoreland Restoration Program Overview

Oneida County Cost Share Program
Shoreline Restoration program

1. Landowner to obtain, complete, and return a Cost Share application to Oneida County Land & Water Conservation Department, P.O. Box 400, Rhinelander, WI 54501. This application does not obligate the applicant or Oneida County to enter into a cost share agreement. A completed application is merely stating the landowner is interested in the cost share program and the process can start.
2. An on site visit will be scheduled. The Conservation Specialist will go to the site and perform an assessment of the site. At this point, the landowner may be present but it is not necessary. This visit will determine if the site is eligible for the cost share program.
3. If a complete assessment was not performed during the first visit, another site visit may be necessary to gather more information. That information could be for the type of existing vegetation of the area, measurements, type of soils, etc.
4. The Conservation Specialist will then meet with the landowner to exchange ideas, determine the view corridor if there is one, explain and answer questions regarding the program, future contract obligations, operation and maintenance agreement, etc.
5. A plan will be designed
6. The plan will then be shown to the landowner for their approval. Final tweaking can be made here.
7. The landowner will then be required to obtain a minimum of three cost estimates from contractors of their choice. The landowner will be given four copies of the plan; one for the landowner and three for the contractors. Quantities will be the same for all three contractors and a cost estimate sheet will be provided for completion.
8. The Land and Water Conservation Department staff will reviewed the submitted cost estimates. When the review is completed they will be scheduled on the Land and Water Conservation Committee agenda. The Committee meets once a month and depending on when the cost estimates are submitted, approval may be several

days to up to a month. Usually the low cost estimate will be approved. The amount of the cost share is determined by the lowest cost estimate. This does not mean that the landowner must choose the contractor with the lowest estimate. If the landowner chooses to hire a contractor with a higher cost estimate, the landowner will be responsible for the difference in cost.

9. Before the contract can be signed, Oneida County must have a copy of the homeowner's insurance and the contractor's insurance.
10. Once the Committee approves a cost estimate, it is now time to sign the contract, operation and maintenance agreement and tax form (W-9).
11. The Land and Water Conservation Department shall be notified five working days in advance of start work.
12. Once the work is complete, the landowner is responsible to pay the contractor. Submit paid invoices to the Land and Water Conservation Department. Invoices must have date, check number (if paying by check), paid in full written or stamped, and initials of contractor on them.
13. The Committee must approve payment; therefore payment will be placed on the next available agenda for approval.
14. Payment will be sent to the landowner
15. Periodical site visits will be made over the next ten years