A

APPENDIX A

Public Participation Materials

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

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Lake Management Planning

Why create a lake management plan?

- To create a better understanding of the 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.

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Lake Management Planning

Elements of an Effective Lake Management Planning Project

Data and Information Gathering

Environmental & Sociological

Planning Process

Brings it all together

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Data and information gathering

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

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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

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Watershed Assessment

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

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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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Aquatic Plant Surveys

- Concerned with both native and non-native plants
- Multiple surveys used in assessment
  - Early-season AIS Survey
  - Point-intercept survey
  - Aquatic plant community mapping

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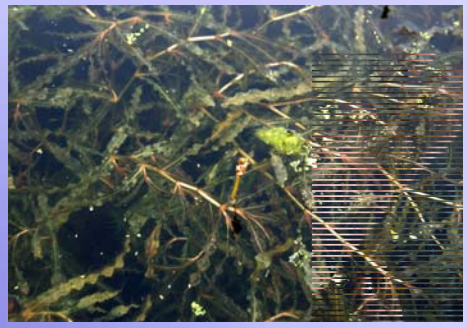
Non-native Aquatic Plants

Curly-leaf Pondweed



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Non-native Aquatic Plants

Eurasian Water Milfoil

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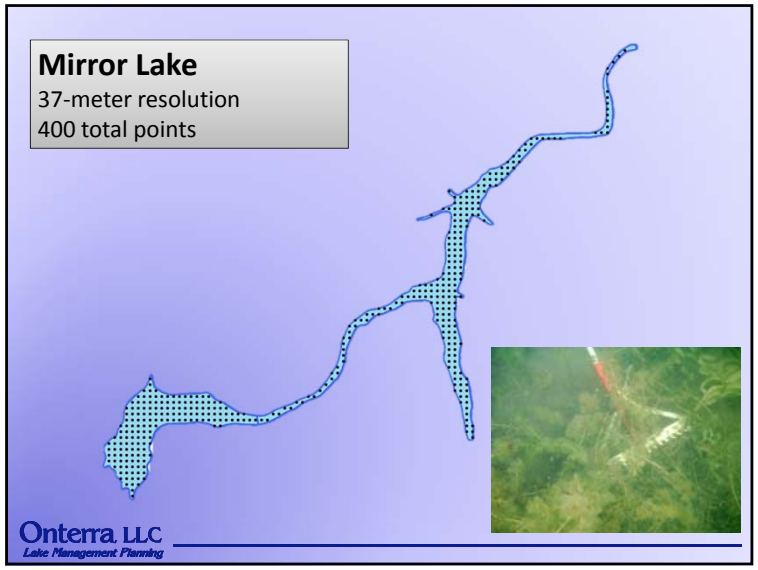

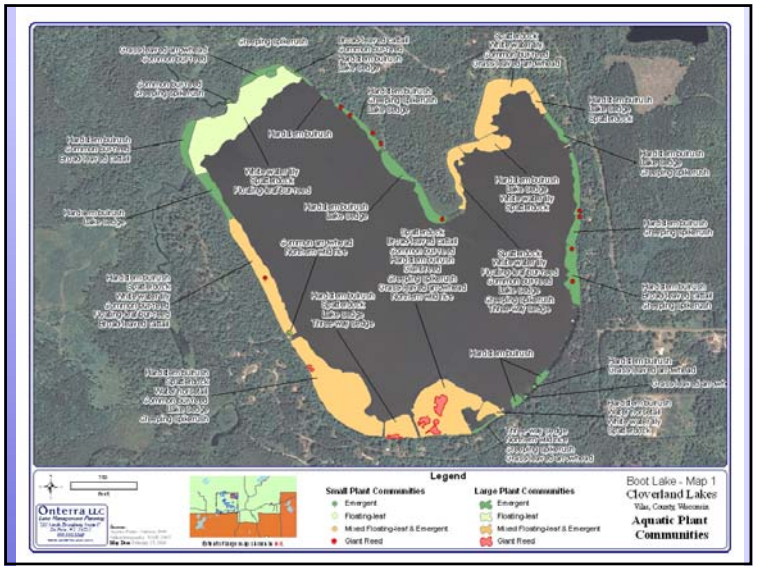

Fisheries Data Integration

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

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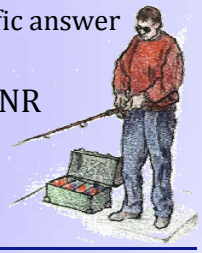
Stakeholder Survey

- 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



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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

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Thank You

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

Wisconsin Lakes Partnership

UW Extension

Wisconsin Dept. of Natural Resources

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Lake Management Planning

Presentation Outline

- **Lake Management Planning Project Overview**
- **Study Results**
  - Water Quality
  - Watershed
  - Shoreland
  - Aquatic Plants
  - Fishery

  Stakeholder Survey
- **"Big Picture"**

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Lake Management Planning

Study and Plan Goals

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

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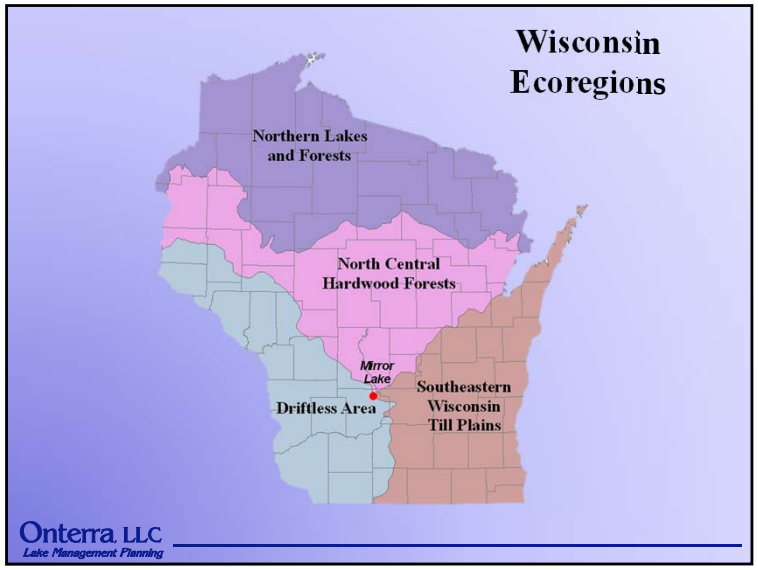
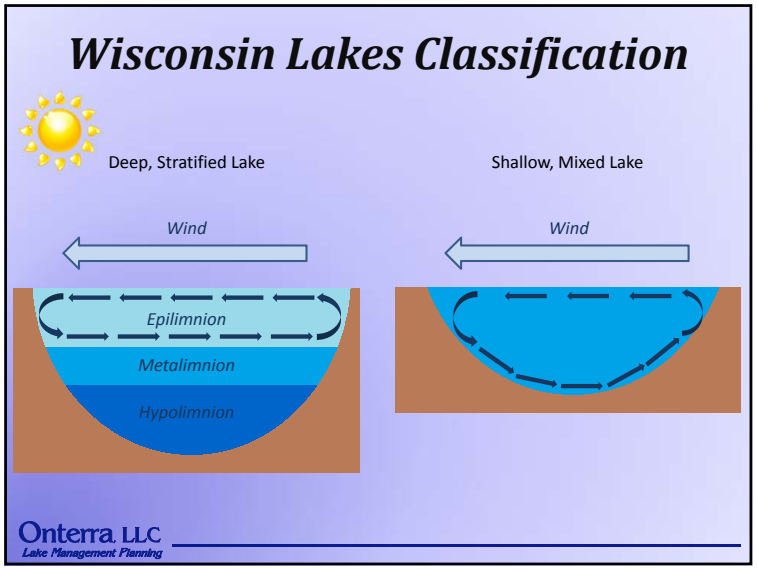
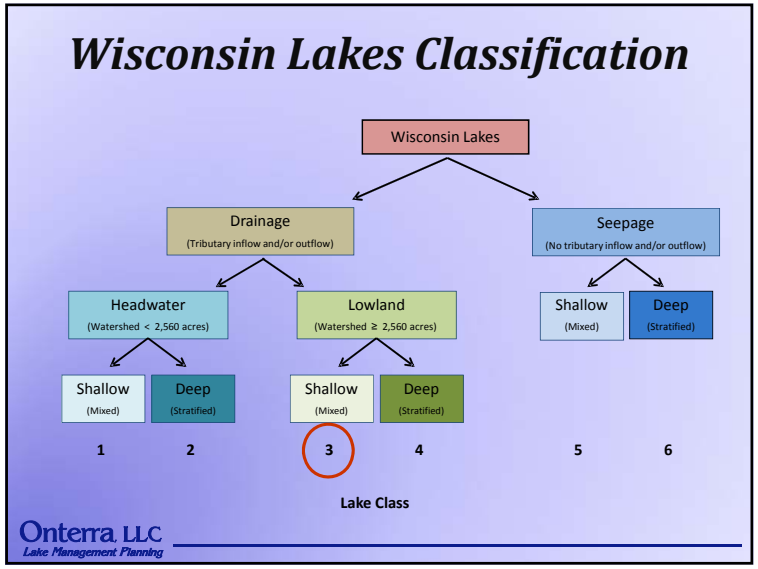
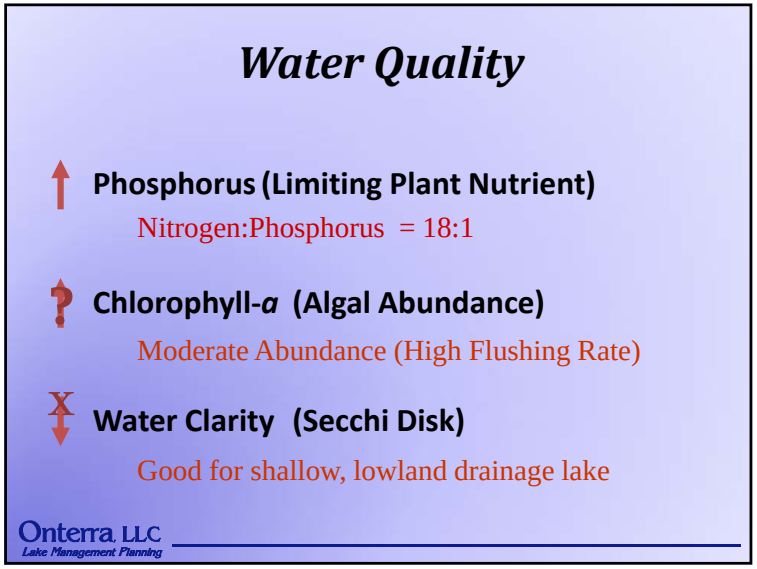
Lake Management Planning


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


Wisconsin Lakes Classification
Deep, Stratified Lake
Shallow, Mixed Lake
Wind
Wind
Epilimnion
Metalimnion
Hypolimnion
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 = 18:1
Chlorophyll-a (Algal Abundance)
Moderate Abundance (High Flushing Rate)
Water Clarity (Secchi Disk)
Good for shallow, lowland drainage lake
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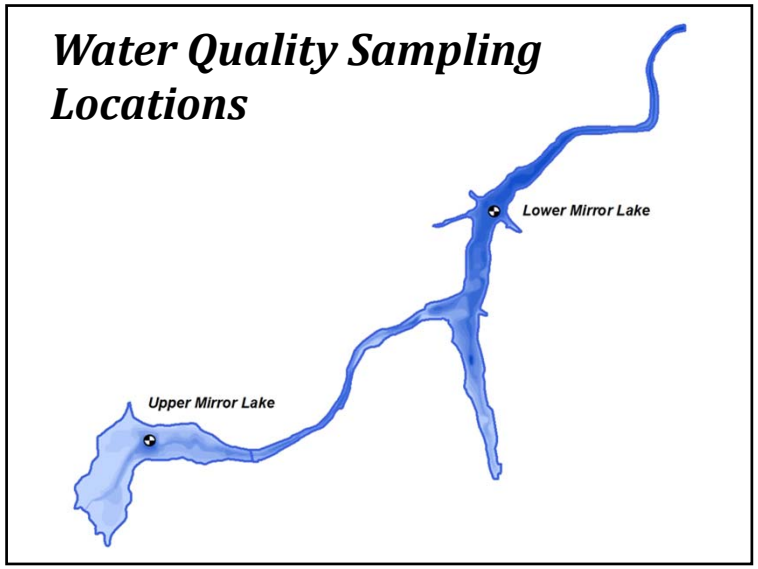
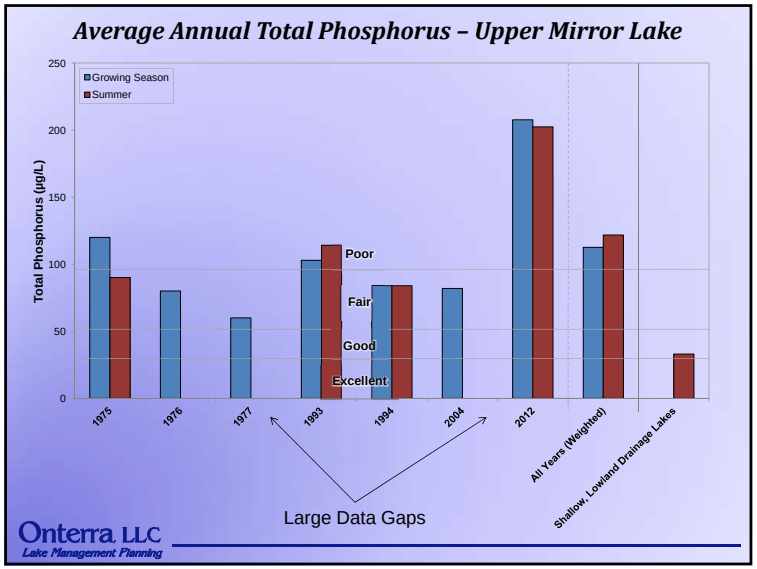
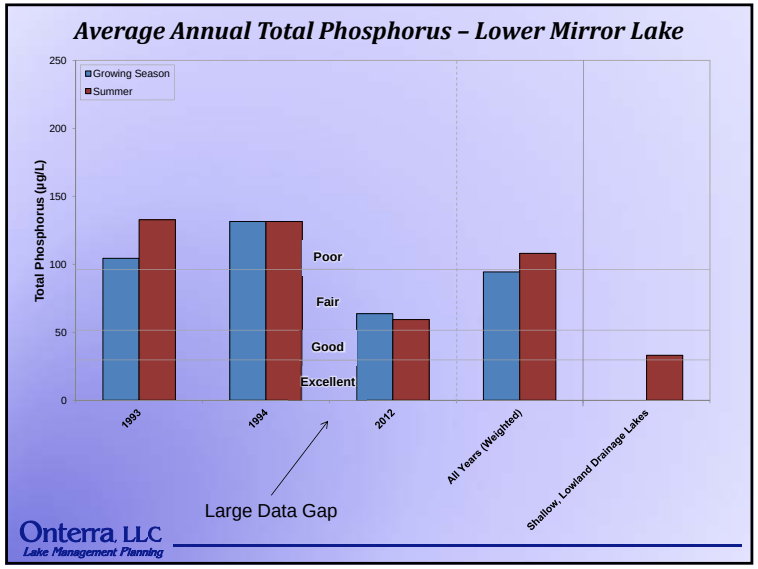
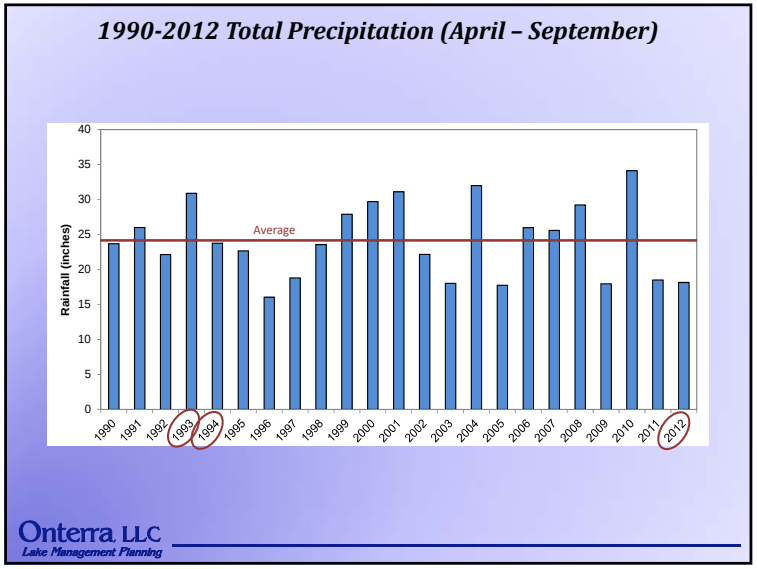
Lake Management Planning


Water Quality Sampling Locations
Lower Mirror Lake
Upper Mirror Lake


Average Annual Total Phosphorus – Upper Mirror Lake
Growing Season
Summer
Total Phosphorus (µg/L)
250
200
150
100
50
0
Poor
Fair
Good
Excellent
1975
1976
1977
1983
1984
2004
2012
All Years (Weighted)
Shallow, Lowland Drainage Lakes
Large Data Gaps
Onterra LLC
Lake Management Planning


Average Annual Total Phosphorus – Lower Mirror Lake
Growing Season
Summer
Total Phosphorus (µg/L)
250
200
150
100
50
0
Poor
Fair
Good
Excellent
1983
1984
2012
All Years (Weighted)
Shallow, Lowland Drainage Lakes
Large Data Gap
Onterra LLC
Lake Management Planning


1990-2012 Total Precipitation (April – September)
Rainfall (inches)
40
35
30
25
20
15
10
5
0
Average
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
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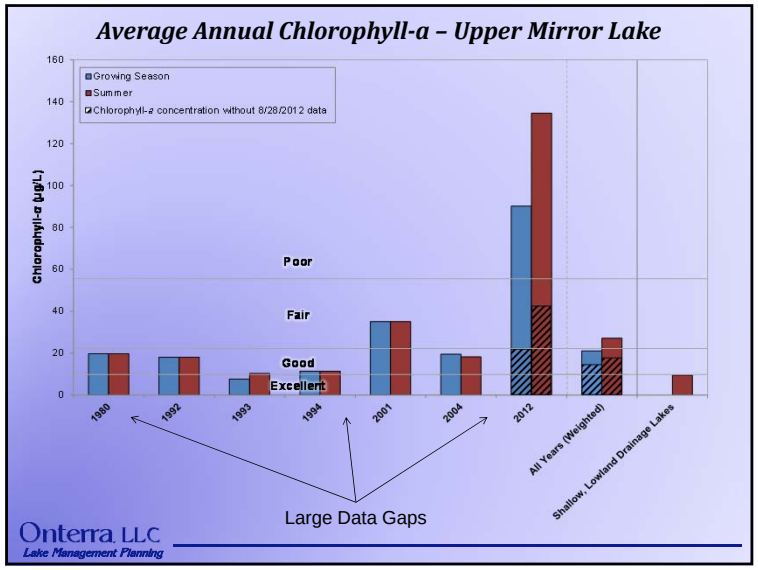
Lake Management Planning


Average Annual Chlorophyll-a – Upper Mirror Lake
Growing Season
Summer
Chlorophyll-a concentration without 8/28/2012 data
Chlorophyll-a (µg/L)
Poor
Fair
Good
Excellent
1980
1992
1993
1994
2001
2004
2012
All Years (Weighted)
Shallow, Lowland Drainage Lakes
Large Data Gaps
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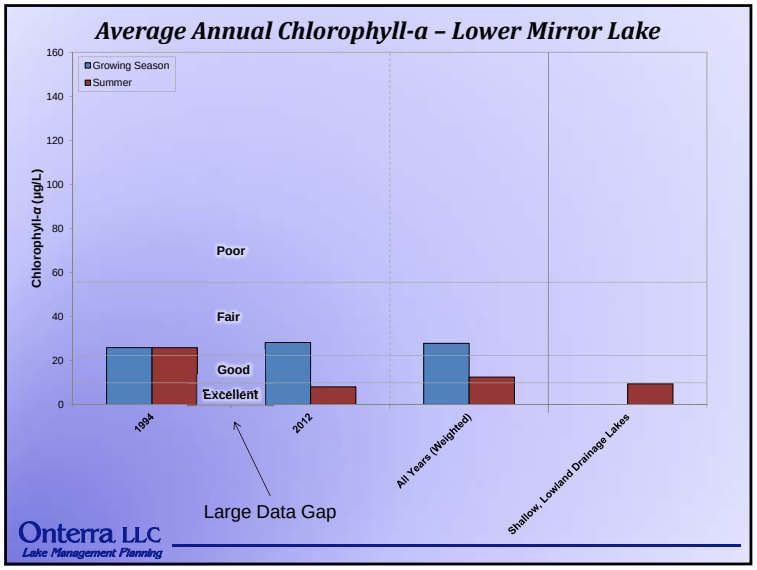
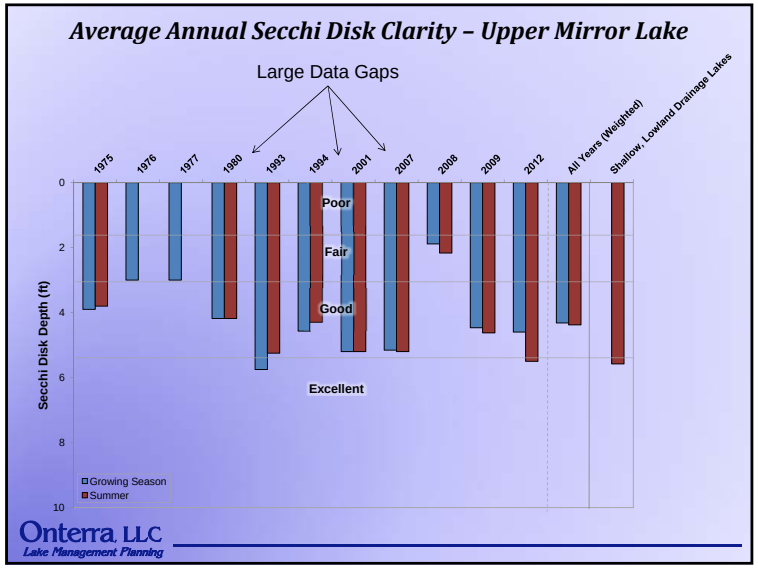
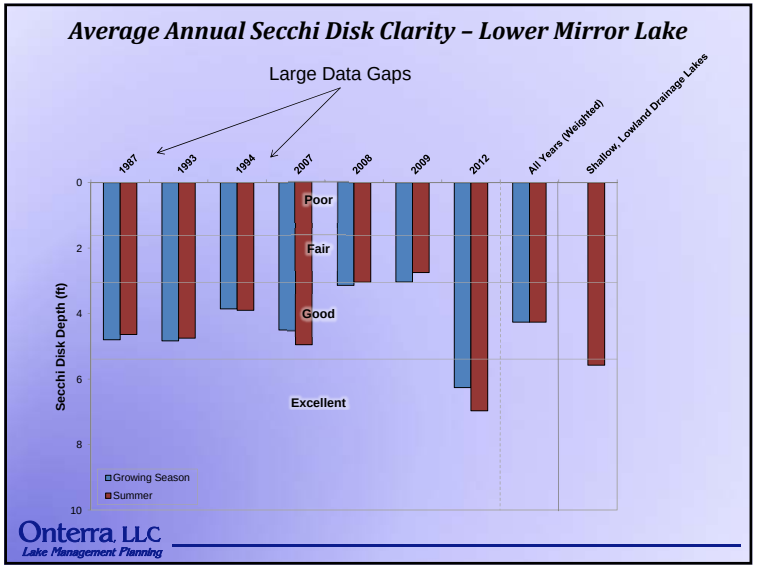
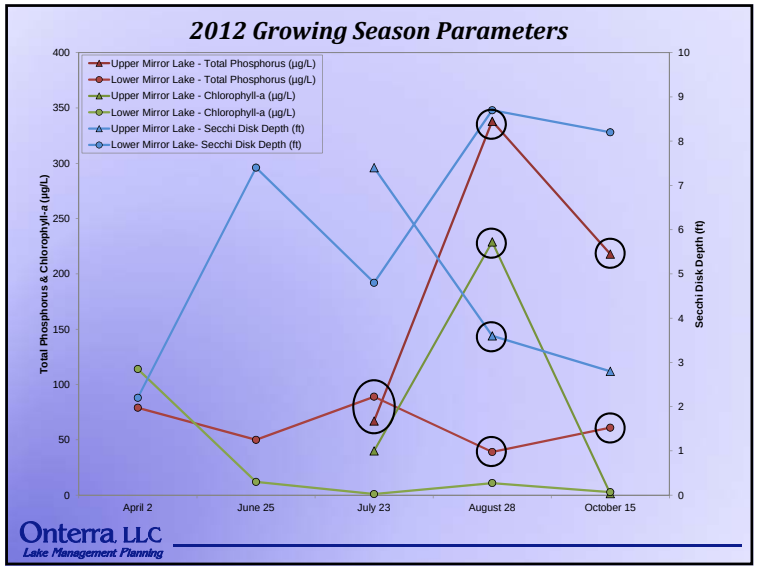
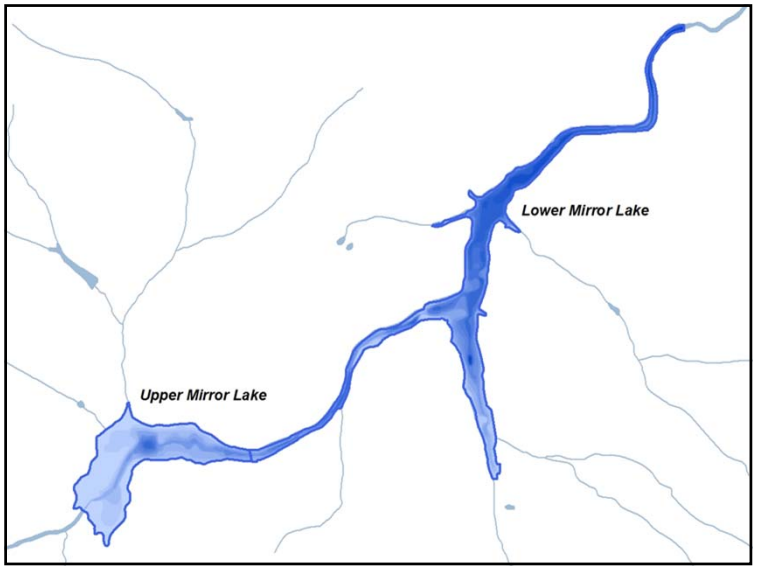
Lake Management Planning

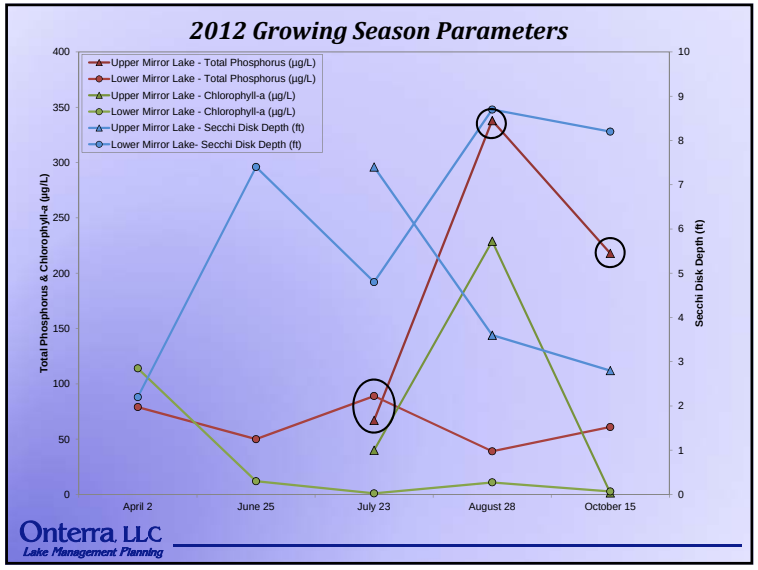

Average Annual Chlorophyll-a – Lower Mirror Lake
Growing Season
Summer
Chlorophyll-a (µg/L)
Poor
Fair
Good
Excellent
1994
2012
All Years (Weighted)
Shallow, Lowland Drainage Lakes
Large Data Gap
Onterra LLC
Lake Management Planning

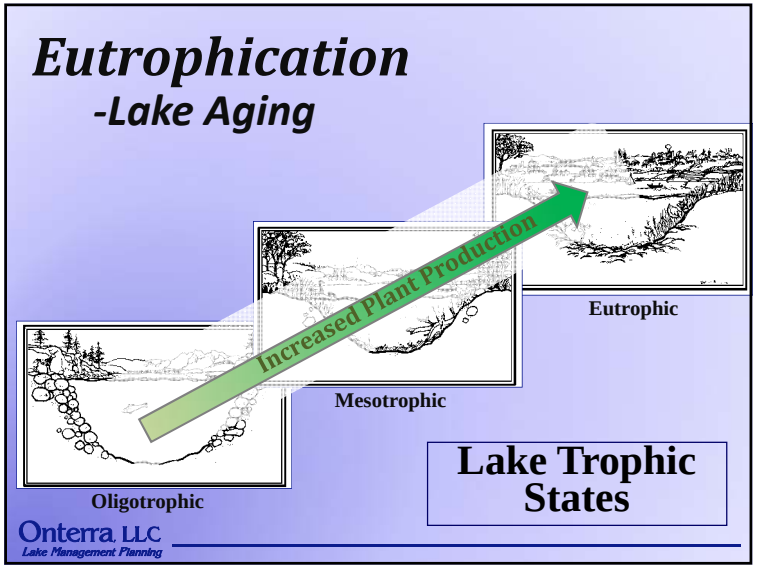

Average Annual Secchi Disk Clarity – Upper Mirror Lake
Large Data Gaps
1975
1976
1977
1980
1993
1994
2001
2007
2008
2009
2012
All Years (Weighted)
Shallow, Lowland Drainage Lakes
Secchi Disk Depth (ft)
Poor
Fair
Good
Excellent
Growing Season
Summer
Onterra LLC
Lake Management Planning


Average Annual Secchi Disk Clarity – Lower Mirror Lake
Large Data Gaps
1987
1993
1994
2007
2008
2009
2012
All Years (Weighted)
Shallow, Lowland Drainage Lakes
Secchi Disk Depth (ft)
Poor
Fair
Good
Excellent
Growing Season
Summer
Onterra LLC
Lake Management Planning


2012 Growing Season Parameters
Upper Mirror Lake - Total Phosphorus (µg/L)
Lower Mirror Lake - Total Phosphorus (µg/L)
Upper Mirror Lake - Chlorophyll-a (µg/L)
Lower Mirror Lake - Chlorophyll-a (µg/L)
Upper Mirror Lake - Secchi Disk Depth (ft)
Lower Mirror Lake- Secchi Disk Depth (ft)
Total Phosphorus & Chlorophyll-a (µg/L)
Secchi Disk Depth (ft)
April 2
June 25
July 23
August 28
October 15
Onterra LLC
Lake Management Planning


Lower Mirror Lake
Upper Mirror Lake


2012 Growing Season Parameters
Upper Mirror Lake - Total Phosphorus (µg/L)
Lower Mirror Lake - Total Phosphorus (µg/L)
Upper Mirror Lake - Chlorophyll-a (µg/L)
Lower Mirror Lake - Chlorophyll-a (µg/L)
Upper Mirror Lake - Secchi Disk Depth (ft)
Lower Mirror Lake- Secchi Disk Depth (ft)
Total Phosphorus & Chlorophyll-a (µg/L)
Secchi Disk Depth (ft)
April 2
June 25
July 23
August 28
October 15
Onterra LLC
Lake Management Planning


Eutrophication
-Lake Aging
Increased Plant Production
Eutrophic
Mesotrophic
Oligotrophic
Lake Trophic States
Onterra LLC
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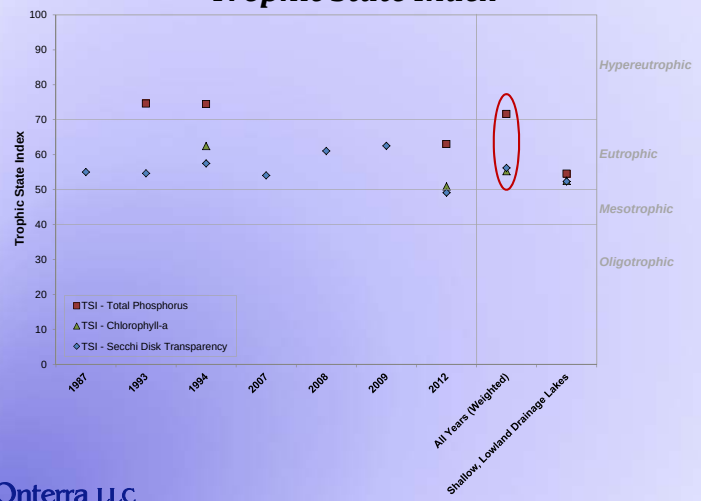
Trophic State Index



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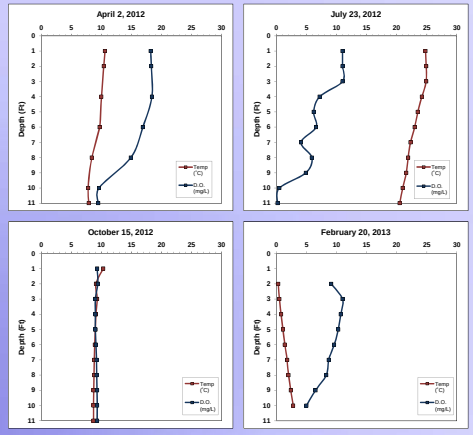
Dissolved Oxygen / Temperature



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Other Water Quality Results

- Alkalinity = 108 mg/L as $CaCO_3$ – indicates very little sensitivity to acid rain
- Moderate calcium concentrations (26.1 mg/L)
  - Suitable for zebra mussel establishment

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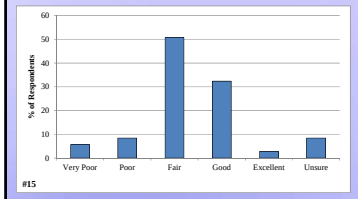
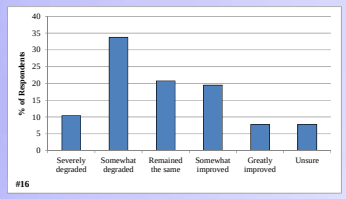
Stakeholder Survey – Water Quality

How would you describe the current water quality of Mirror Lake?



How has the water quality changed in Mirror Lake since you first visited the lake?



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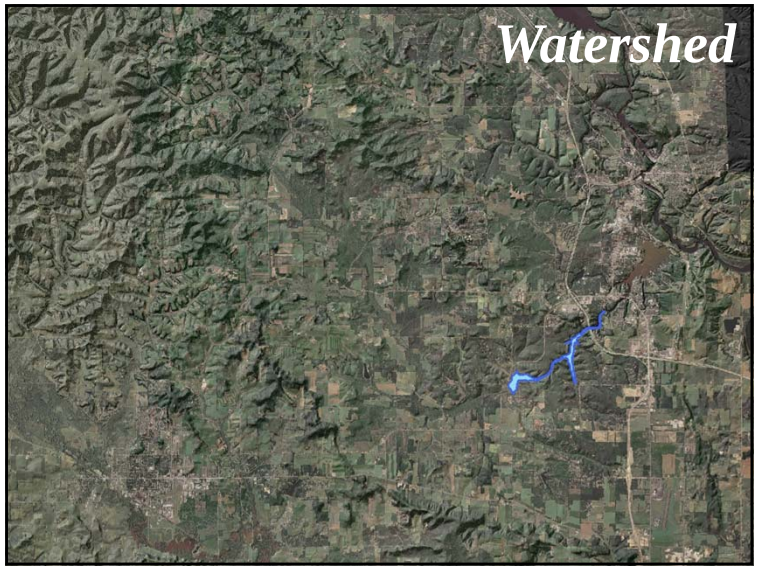
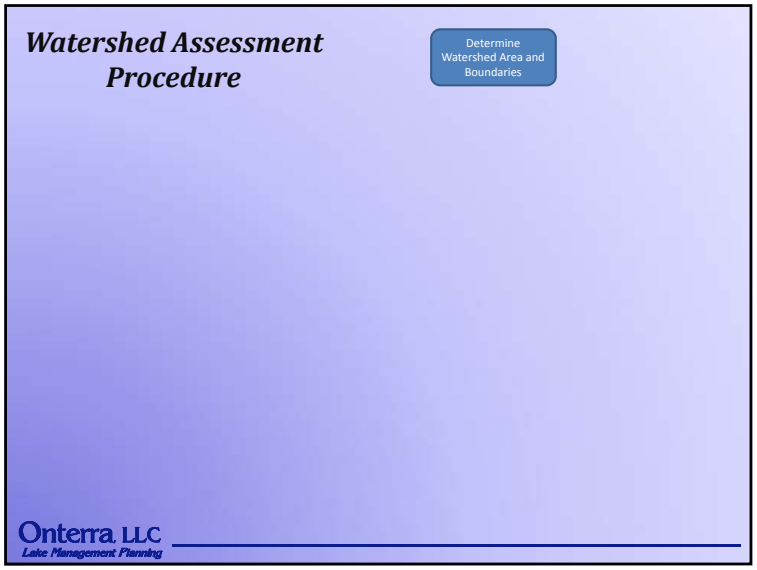
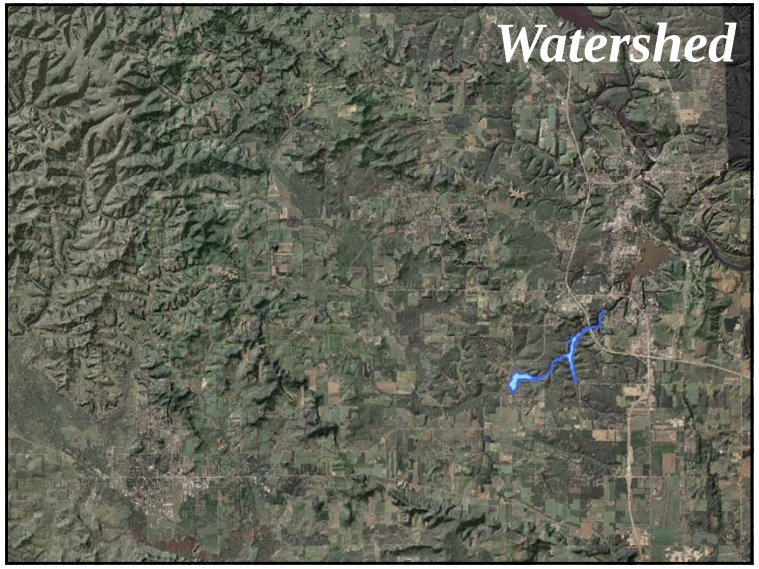
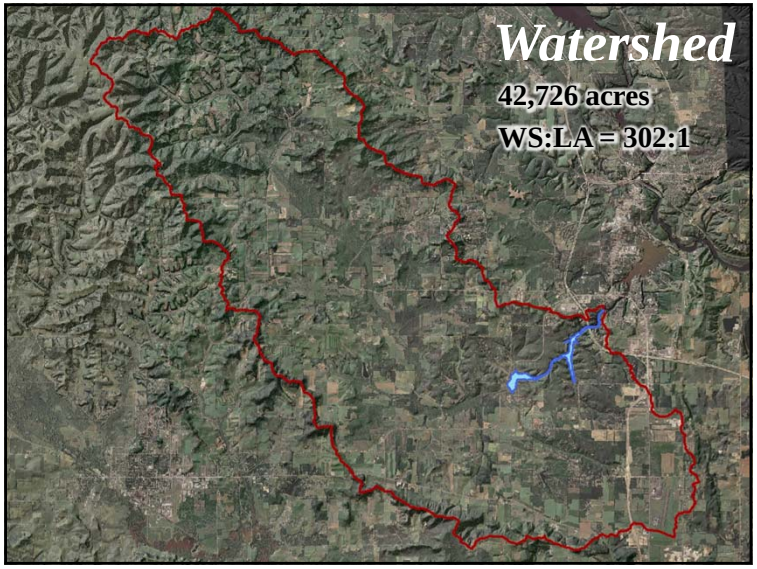
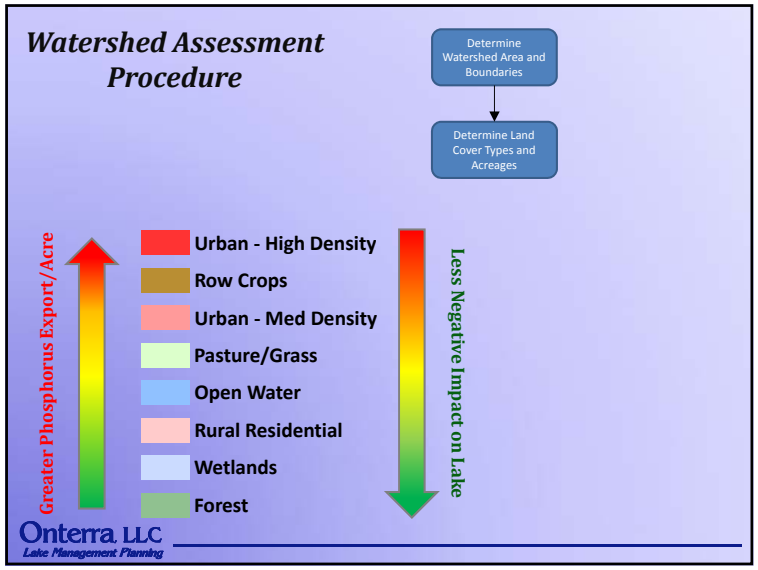
Lake Management Planning

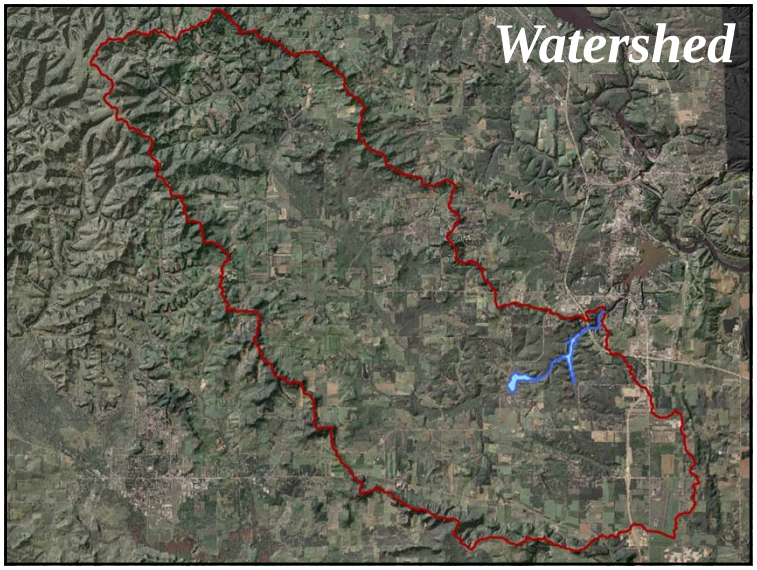

Watershed

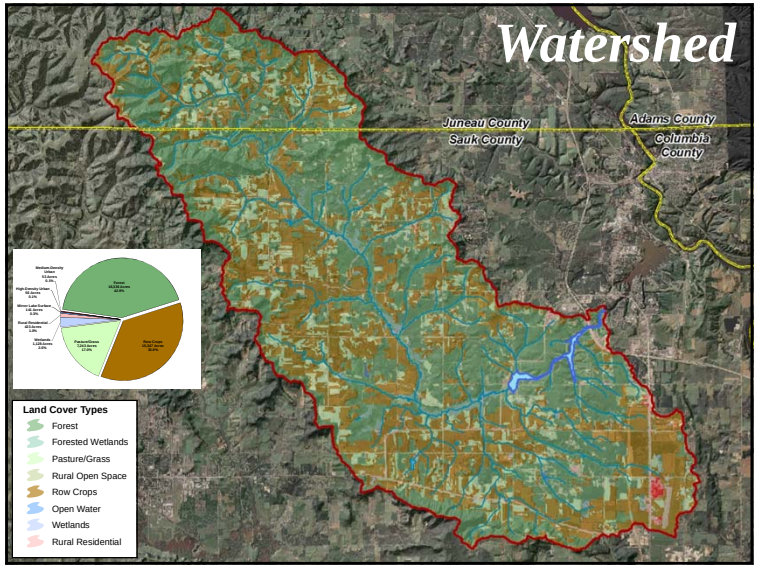

Watershed Assessment Procedure
Determine Watershed Area and Boundaries
Onterra LLC
Lake Management Planning

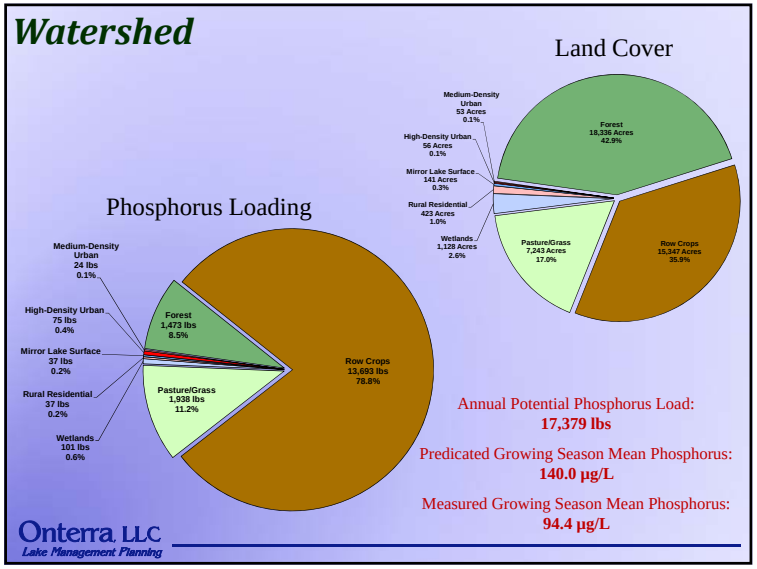

Watershed


Watershed
42,726 acres
WS:LA = 302:1


Watershed Assessment Procedure
Determine Watershed Area and Boundaries
Determine Land Cover Types and Acreages
Greater Phosphorus Export/Acre
Less Negative Impact on Lake
Urban - High Density
Row Crops
Urban - Med Density
Pasture/Grass
Open Water
Rural Residential
Wetlands
Forest
Onterra LLC
Lake Management Planning


Watershed


Watershed
Juneau County
Sauk County
Adams County
Columbia County
Land Cover Types
Forest
Forested Wetlands
Pasture/Grass
Rural Open Space
Row Crops
Open Water
Wetlands
Rural Residential


Watershed
Land Cover
Forest 18,336 Acres 42.9%
Row Crops 15,347 Acres 35.9%
Pasture/Grass 7,243 Acres 17.0%
Wetlands 1,128 Acres 2.6%
Rural Residential 423 Acres 1.0%
Mirror Lake Surface 141 Acres 0.3%
High-Density Urban 56 Acres 0.1%
Medium-Density Urban 53 Acres 0.1%
Phosphorus Loading
Forest 1,473 lbs 8.5%
Row Crops 13,693 lbs 78.8%
Pasture/Grass 1,938 lbs 11.2%
Wetlands 101 lbs 0.6%
Rural Residential 37 lbs 0.2%
Mirror Lake Surface 37 lbs 0.2%
High-Density Urban 75 lbs 0.4%
Medium-Density Urban 24 lbs 0.1%
Annual Potential Phosphorus Load:
17,379 lbs
Predicated Growing Season Mean Phosphorus:
140.0 µg/L
Measured Growing Season Mean Phosphorus:
94.4 µg/L
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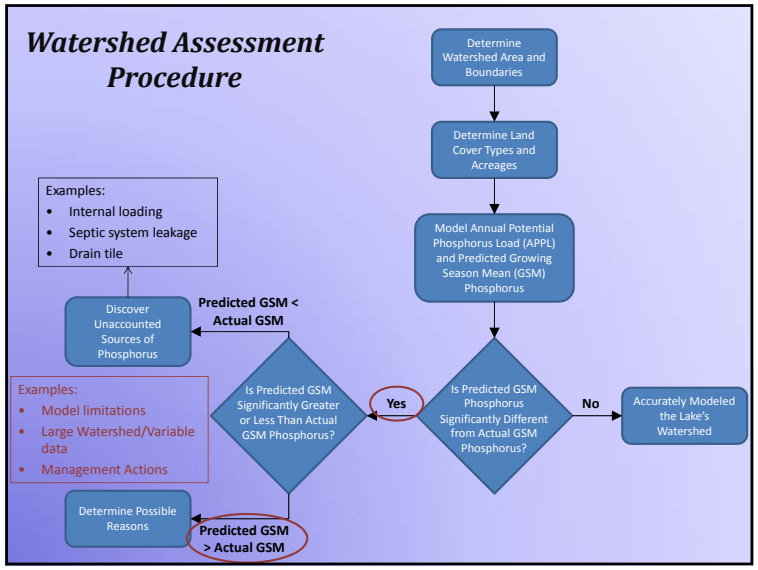
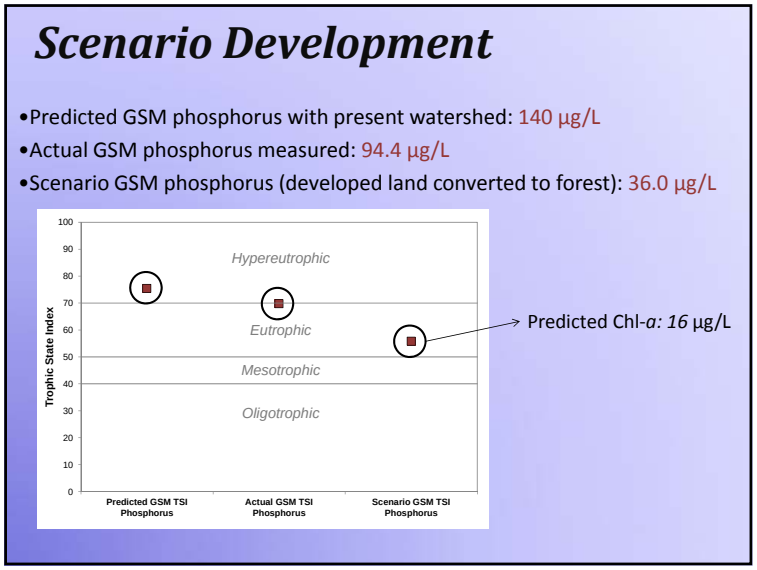
Lake Management Planning


Watershed Assessment Procedure
Determine Watershed Area and Boundaries
Determine Land Cover Types and Acreages
Model Annual Potential Phosphorus Load (APPL) and Predicted Growing Season Mean (GSM) Phosphorus
Is Predicted GSM Phosphorus Significantly Different from Actual GSM Phosphorus?
Yes
No
Accurately Modeled the Lake's Watershed
Is Predicted GSM Significantly Greater or Less Than Actual GSM Phosphorus?
Predicted GSM < Actual GSM
Discover Unaccounted Sources of Phosphorus
Examples:
Internal loading
Septic system leakage
Drain tile
Predicted GSM > Actual GSM
Determine Possible Reasons
Examples:
Model limitations
Large Watershed/Variable data
Management Actions


Scenario Development
•Predicted GSM phosphorus with present watershed: 140 µg/L
•Actual GSM phosphorus measured: 94.4 µg/L
•Scenario GSM phosphorus (developed land converted to forest): 36.0 µg/L
Trophic State Index
Hypereutrophic
Eutrophic
Mesotrophic
Oligotrophic
Predicted GSM TSI Phosphorus
Actual GSM TSI Phosphorus
Scenario GSM TSI Phosphorus
Predicted Chl-a: 16 µg/L


Shoreland Condition


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
Onterra LLC
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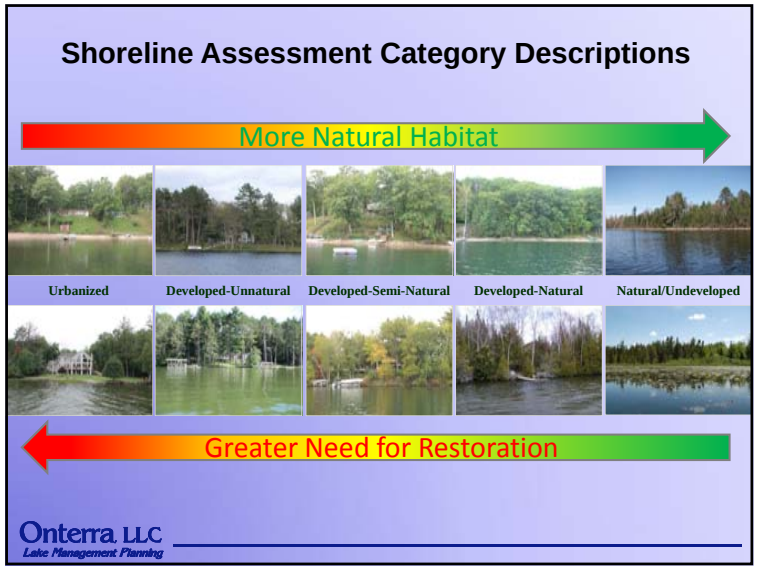
Shoreline Assessment Category Descriptions
More Natural Habitat
Urbanized
Developed-Unnatural
Developed-Semi-Natural
Developed-Natural
Natural/Undeveloped
Greater Need for Restoration
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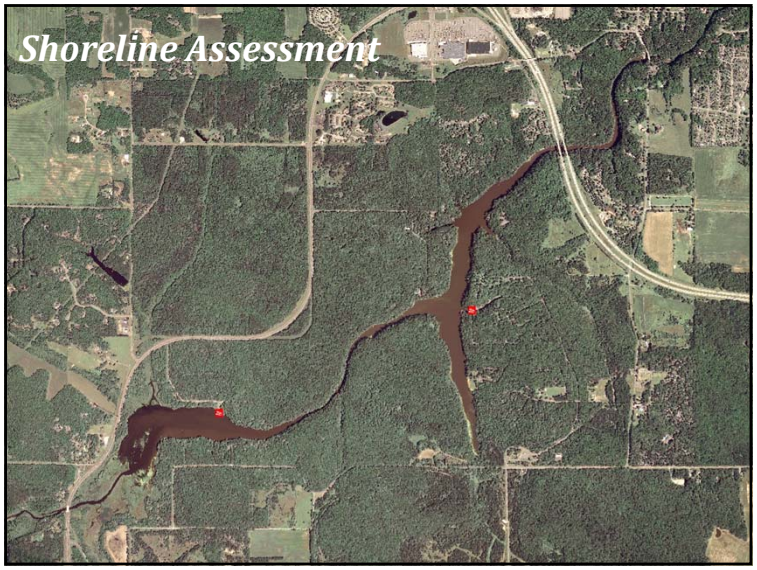
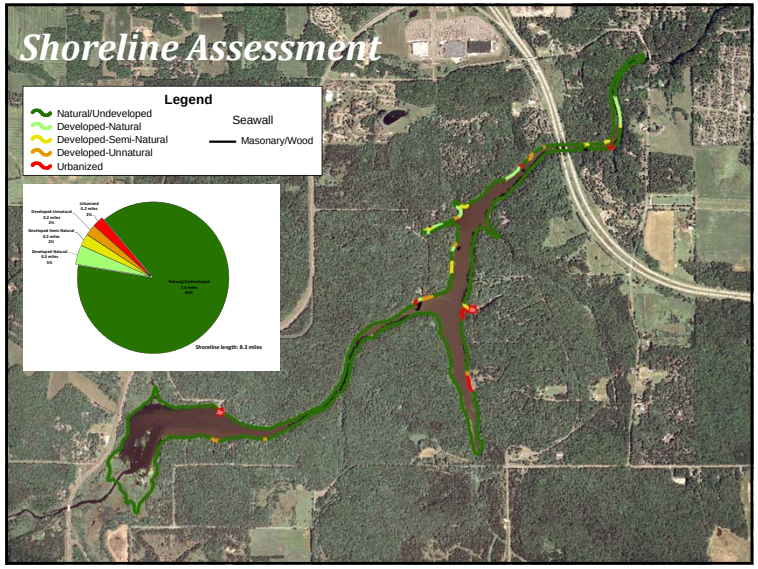
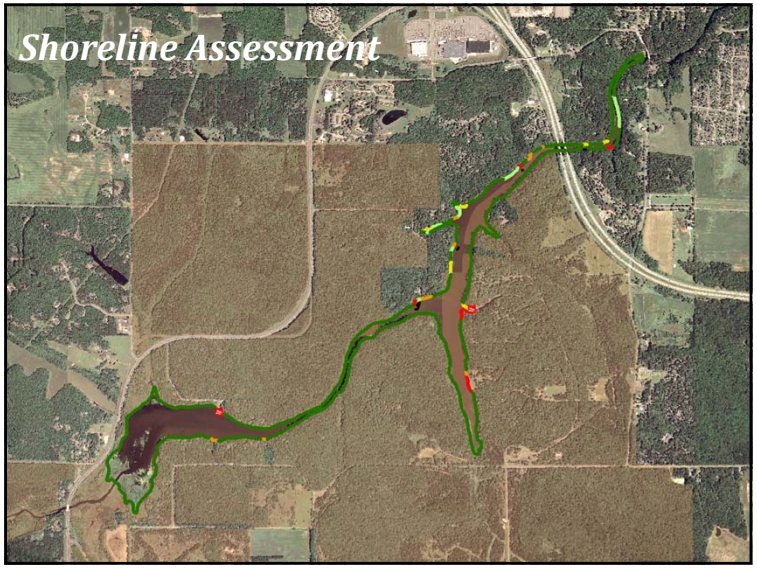

Shoreline Assessment


Shoreline Assessment
Legend
Natural/Undeveloped
Developed-Natural
Developed-Semi-Natural
Developed-Unnatural
Urbanized
Seawall
Masonary/Wood


Shoreline Assessment

Coarse Woody Habitat

- Provides shoreland erosion control and prevents suspension of sediments.
- Preferred habitat for a variety of aquatic life.
  - Periphyton growth fed upon by insects.
  - Refuge, foraging and spawning habitat for fish.
  - Complexity of CWH important.
- Changing of logging and shoreland development practices = reduced CWH in Wisconsin lakes.
- Survey aimed at quantifying CWH in Mirror Lake

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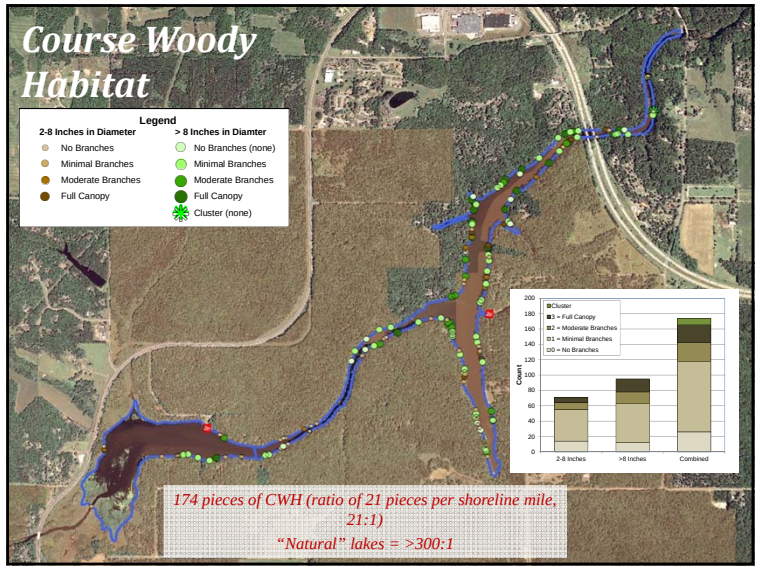
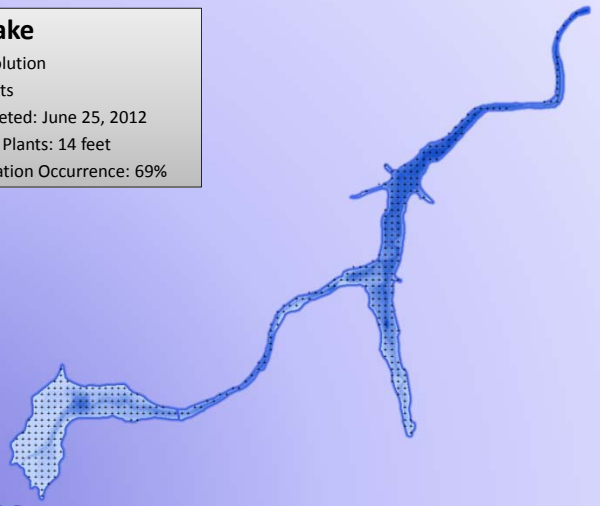
Course Woody Habitat



174 pieces of CWH (ratio of 21 pieces per shoreline mile, 21:1)
"Natural" lakes = >300:1

Mirror Lake
37-meter resolution
400 total points
Survey Completed: June 25, 2012
Max Depth of Plants: 14 feet
Littoral Vegetation Occurrence: 69%



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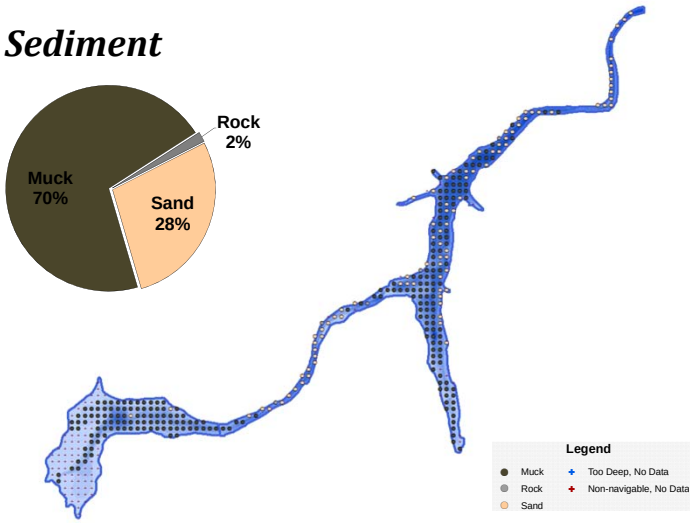
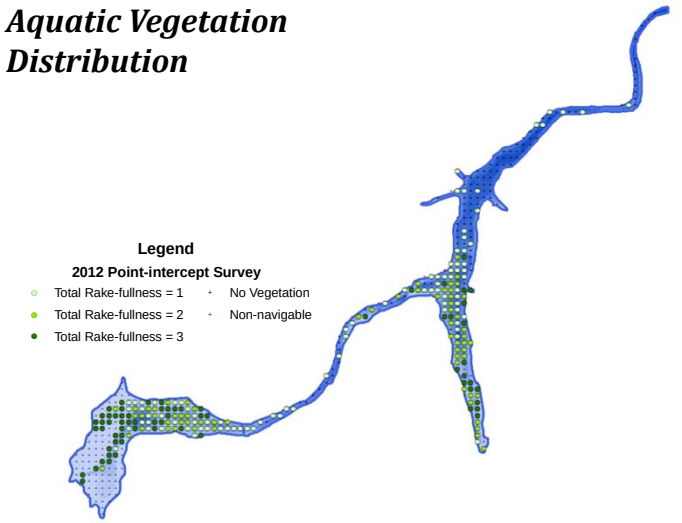
Sediment



Aquatic Vegetation Distribution



Species List

- **31 Native Species**
  - **5 Non-native Species:**
    - **Eurasian water milfoil**
    - **Curly-leaf pondweed**
    - **Pale-yellow iris**
    - **Japanese knotweed**
    - **Sweetflag (naturalized)**
- **2012 Average Conservatism: 6.0**

Life Form	Scientific Name	Common Name	Coefficient of Conservatism (c)	2012 (Onterra)
Emergent	*Acorus calamus*	Sweetflag	Exotic (Naturalized)	I
	Calla palustris	Water arum	9	X
	Carex comosa	Bristly sedge	5	I
	Carex lurida	Shallow sedge	8	I
	Eleocharis obtusa	Blunt spikerush	3	I
	Fallopia japonica	Japanese knotweed	Exotic (Invasive)	I
	Iris pseudacorus	Pale-yellow iris	Exotic (Invasive)	I
	Juncus effusus	Soft rush	4	I
	Sagittaria latifolia	Common arrowhead	3	X
	Sagittaria rigida	Stiff arrowhead	8	I
	Schoenoplectus tabernaemontani	Softstem bulrush	4	I
	Scirpus atrovirens	Black bulrush	3	I
	Scirpus cyperinus	Wool grass	4	I
	Sparganium sp. (sterile)	Bur-reed species (sterile)	N/A	I
FL	*Nymphaea odorata*	White water lily	6	I
Submergent	*Callitriche palustris*	Common water starwort	8	I
	Ceratophyllum demersum	Coontail	3	X
	Chara spp.	Muskgrasses	7	X
	Elodea canadensis	Common waterweed	3	X
	Elodea nuttallii	Slender waterweed	7	X
	Heteranthera dubia	Water stargrass	6	X
	Myriophyllum spicatum	Eurasian water milfoil	Exotic (Invasive)	X
	Najas flexilis	Slender naiad	6	X
	Potamogeton amplifolius	Large-leaf pondweed	7	X
	Potamogeton crispus	Curly-leaf pondweed	Exotic (Invasive)	X
	Potamogeton epihydrus	Ribbon-leaf pondweed	8	X
	Potamogeton friesii	Fries' pondweed	8	X
	Potamogeton nodosus	Long-leaf pondweed	7	X
	Potamogeton strictifolius	Stiff pondweed	8	X
	Potamogeton zosteriformis	Flat-stem pondweed	6	X
	Ranunculus aquatilis	White water-crowfoot	8	X
	Stuckenia pectinata	Sago pondweed	3	X
FF	*Lemna turionifera*	Turion duckweed	2	X
	Spirodela polyrhiza	Greater duckweed	5	X
	Wolffia spp.	Watermeal species	N/A	X

FL = Floating Leaf; FF = Free Floating
X = Located on rake during point-intercept survey; I = Incidental Species

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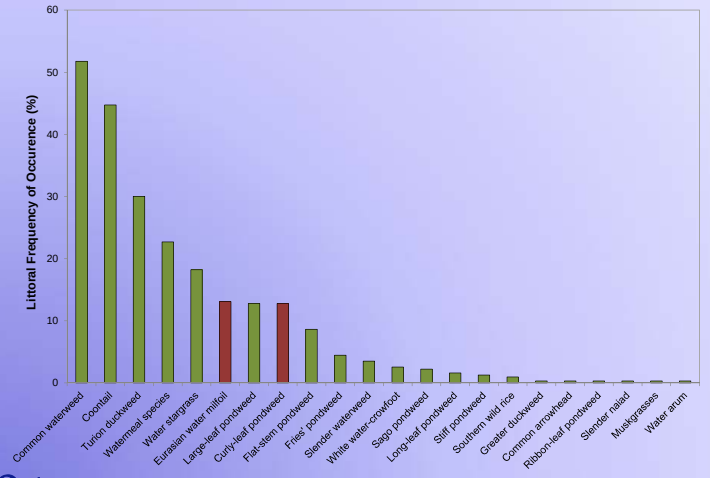
2012 Littoral Frequency of Occurrence



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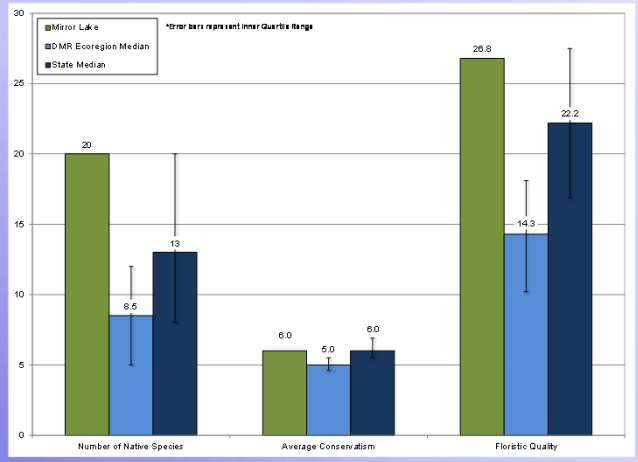
Floristic Quality Analysis



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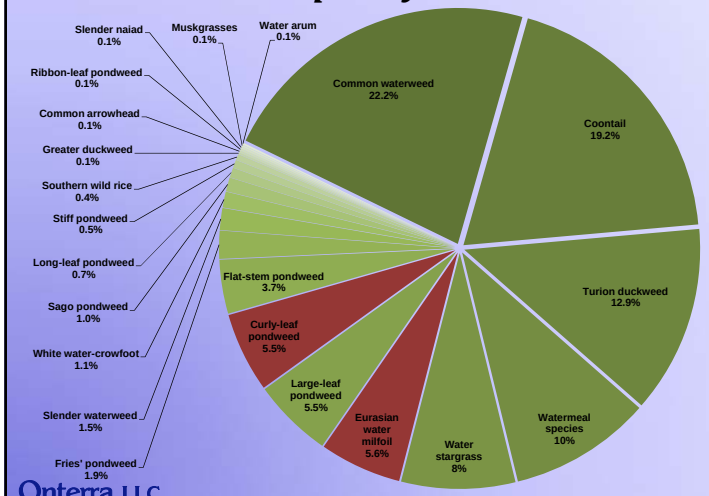
2012 Relative Frequency



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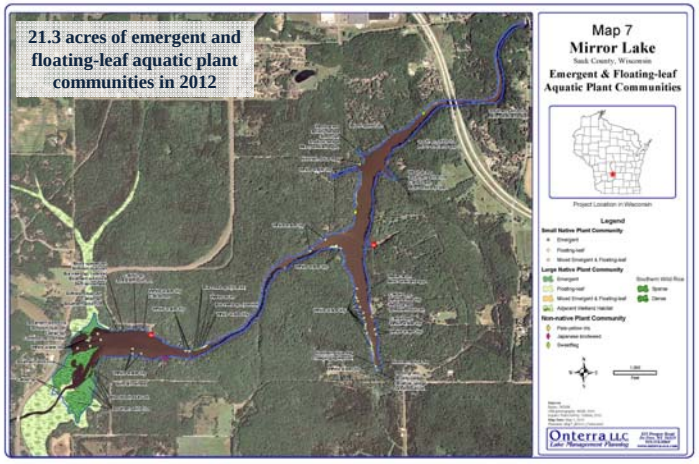
2012 Community Map



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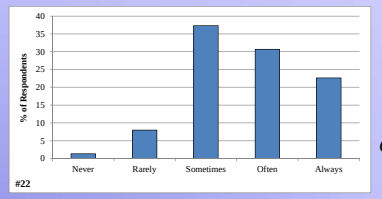
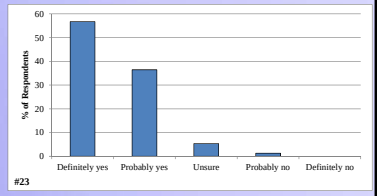
Stakeholder Survey – Aquatic Plants and Algae

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



Considering your answer to Question #22, do you believe aquatic plant control is needed on Mirror Lake?



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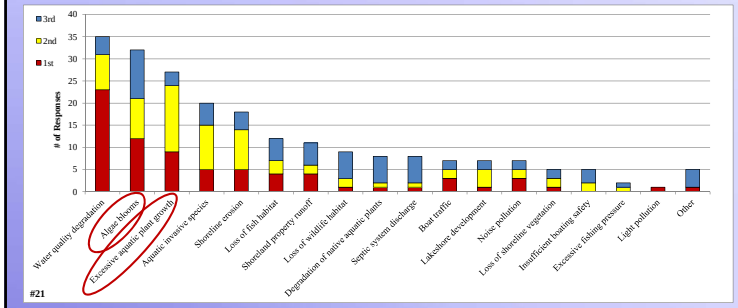
Stakeholder Survey – Aquatic Plants and Algae

Please rank your top three concerns regarding Mirror Lake.



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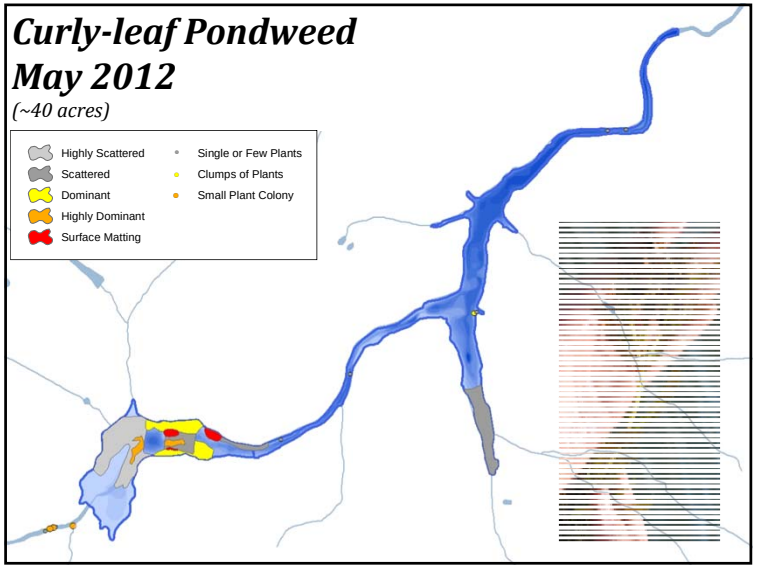
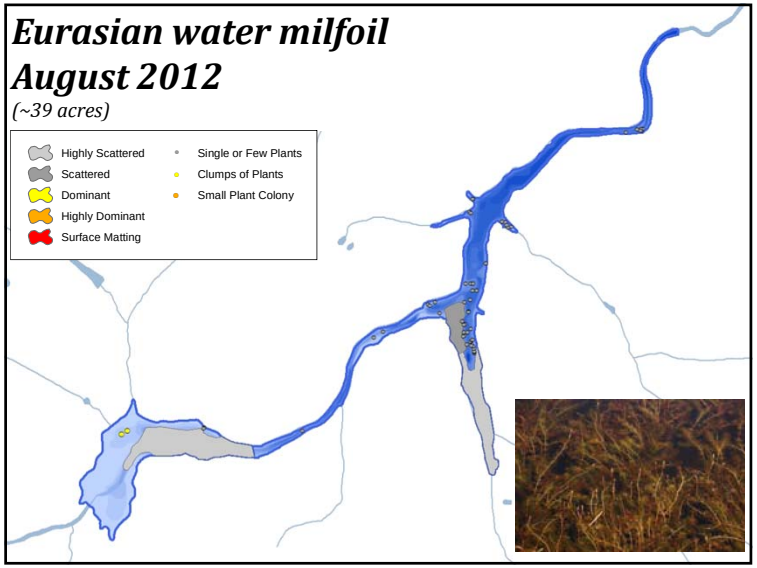
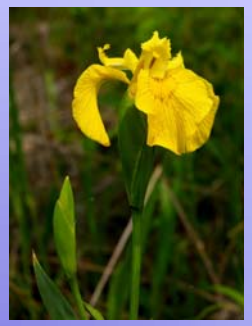
Curly-leaf Pondweed
May 2012
(~40 acres)



Eurasian water milfoil
August 2012
(~39 acres)



Pale-yellow iris & Japanese knotweed



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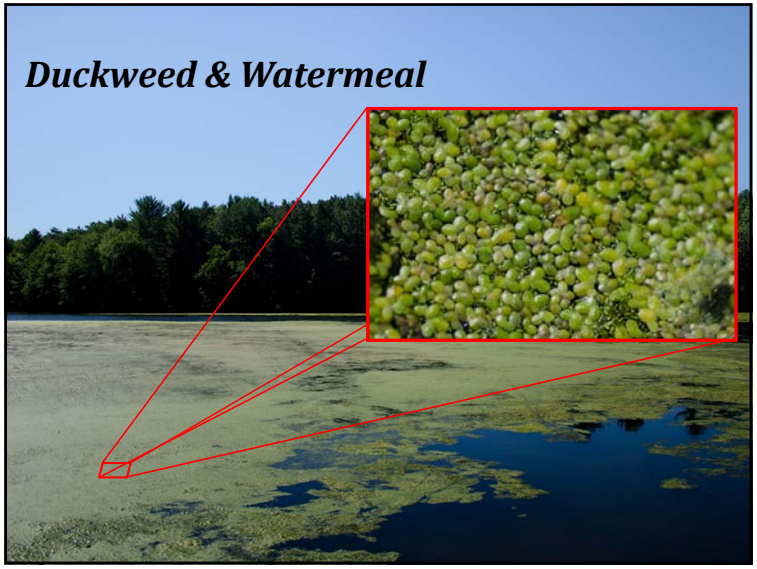
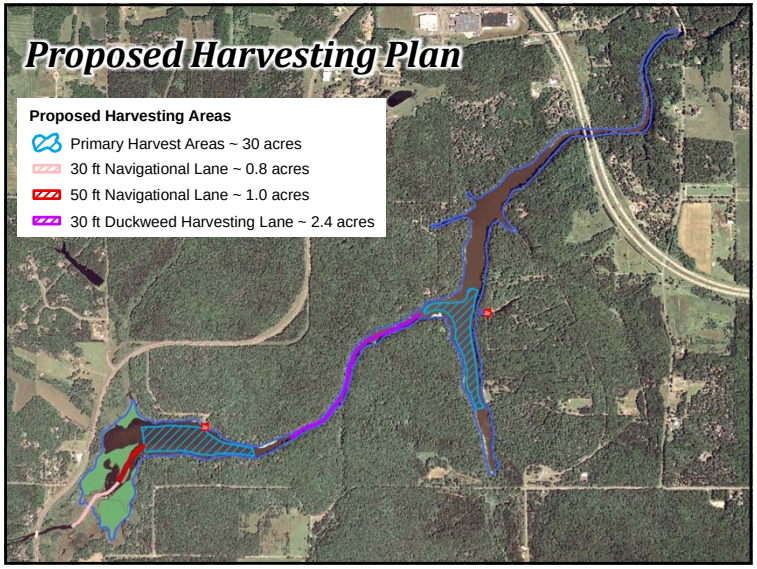
Duckweed & Watermeal



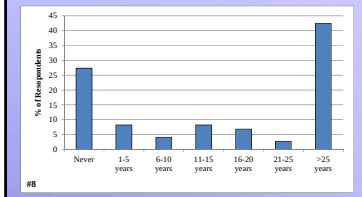
Common waterweed & Coontail

Proposed Harvesting Plan

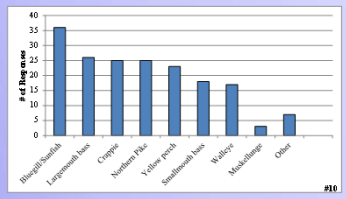


Stakeholder Survey – Mirror Lake Fishery

For how many years have you fished Mirror Lake?



What species of fish do you like to catch in Mirror Lake?



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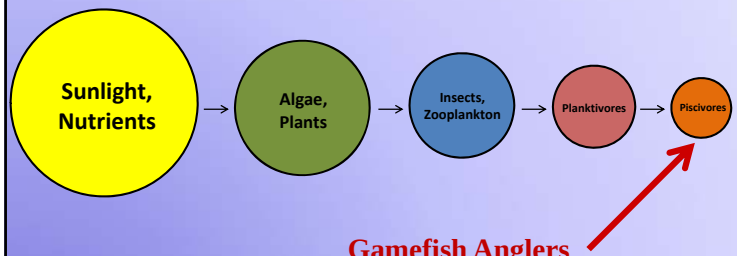
Mirror Lake Fishery



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Walleye Stocking Data

Year	Age Class	# Stocked	Avg. Length (inches)
1986	Fingerling	8,473	3
1987	Fingerling	33,000	5.5
1988	Fingerling	5,772	2
1989	Fingerling	11,300	3
1991	Fingerling	6,750	2
1992	Fingerling	5,763	5.5
1995	Fingerling	1,435	4.5
1996	Fingerling	2,500	6.5
1998	Large Fingerling	1,020	5.7
1998	Small Fingerling	13,700	1.4
1999	Fry	246,600	0.4
2000	Fry	246,000	0.5
2000	Large Fingerling	3,204	6.4
2000	Small Fingerling	18,756	1.4
2001	Fry	246,000	0.5
2002	Large Fingerling	3,780	7.7
2003	Small Fingerling	6,850	1.4
2004	Small Fingerling	6,850	1.5
2005	Large Fingerling	1,375	7.4
2005	Small Fingerling	6,870	1.8
2006	Small Fingerling	8,520	1.4
2007	Large Fingerling	4,250	7
2008	Small Fingerling	2,466	1.3
2009	Small Fingerling	2,466	1.4

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Conclusions

- Water quality
  - Total phosphorus concentrations *Fair* to *Poor*
    - Highly variable (precipitation)
  - Chlorophyll-*a* also variable, but not excessive (flushing rate/macrophytes)
  - Water clarity *Good* to *Excellent* for shallow, lowland drainage lake
  - Lake is highly productive (eutrophic) as indicated by macrophytes (duckweed)
- Watershed
  - >50% comprised of row crop and pasture/grass
  - 43% comprised of intact forests
  - Modeling indicates remediation efforts likely working

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Conclusions

- Watershed continued
  - Sheer size of watershed means that phosphorus input is hard to control.
  - Completely natural land cover still yields eutrophic lake
  - Majority of shoreline in natural condition
  - Minimal course woody habitat
- Aquatic Plants
  - 5 non-native
  - Excessive growth of duckweed (common waterweed, coontail)
  - Standard analysis indicates native aquatic plant community is of high quality
    - High richness & diversity

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Thank You

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

Wisconsin Lakes Partnership

UW Extension

Wisconsin Dept. of Natural Resources

Onterra LLC Lake Management Planning

Mirror Lake Management Planning Project

November 2012 Update

Submitted by: Brenton Butterfield, Onterra, LLC

With the help of a Lake Management Planning Grant totaling over $22,000 through the Wisconsin Department of Natural Resources (WDNR), a project is underway to create a lake management plan for Mirror Lake. The lake management plan will contain historical and current data from the lake as well as provide guidance for its management by integrating stakeholder perceptions and goals with what is ecologically beneficial for the lake.

As described further below, numerous field studies were carried out on Mirror Lake during 2012. Because of the wealth of data that was collected just within the past few months, much of the data analysis has yet to be completed. This update intends to bring the Mirror Lake District (MLD) up-to-speed on the scientific studies that have occurred, provide some initial observations on the ecology of Mirror Lake, and provide a rough timeline for the remaining actions that will be taken as a part of this planning project.

In April of 2012, Onterra staff had their first glimpse of Mirror Lake with a water quality sampling visit. The lake is sampled once during the spring, monthly during the summer, and once in fall and winter. This gives ecologists an idea of what the nutrient balance is within the lake and what the water quality dynamics are throughout the year. Water samples targeting the larval stage of the invasive zebra mussel were also taken by Onterra staff and sent to the WDNR for analysis as part of efforts to monitor the lake for this invasive species. These results will be available this coming spring.

All aquatic plant surveys were conducted as scheduled, first by visiting the lake on May 23, 2012 to complete an early-season AIS survey. This survey's primary purpose is to search the lake for curly-leaf pondweed (CLP), and is scheduled early in the summer to coincide with this species' peak growth. This survey is also useful in finding incidences of Eurasian water milfoil (EWM) as it is further along in growth than most native plants in early summer. The whole-lake point-intercept survey was conducted by Onterra ecologists on June 25, 2012. This is a grid-based survey designed to assess the aquatic plant community of Mirror Lake at a lake-wide level. On August 27, 2012 Onterra field crews conducted the aquatic plant community mapping survey and Eurasian water milfoil (EWM) peak-biomass survey. The purpose of the aquatic plant community mapping survey is to map the floating-leaf and emergent species that grow within the lake and are typically under-represented in the point-intercept survey. Like the CLP survey, the EWM peak-biomass survey is a meander-based survey in which the field crew surveys the entire lake for EWM when it is at or near its peak growth in late summer. During this survey, EWM locations are mapped and assigned with a density rating.

During the 2012 surveys, populations of both curly-leaf pondweed and Eurasian water milfoil were located in the lake. The point-intercept survey indicates that Mirror Lake contains a moderate number of native aquatic plant species, and that aquatic vegetation was found growing out to 14 feet of water. The submersed species common waterweed and coontail and the free-floating species turion duckweed and watermeal species were the most abundant plants within the lake, while EWM and CLP together comprised approximately 13% of the lake's plant community (Figure 1).

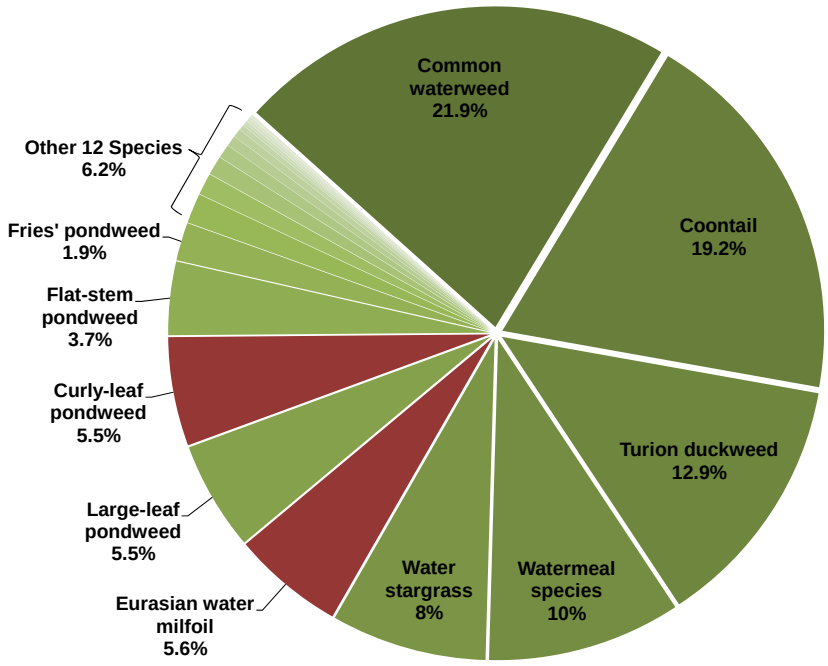


Figure 1. Mirror Lake 2012 aquatic plant relative frequency of occurrence. Created using data from 2012 whole-lake point-intercept survey. Non-native species are indicated with red.

On October 15, 2012 a crew visited Mirror Lake to conduct a shoreline assessment survey. During this survey, the lake's shoreline is examined and classified into one of five development categories based upon its level of human disturbance. The results of this survey may be used to prioritize areas for restoration if the MLD wishes to pursue this. Course woody habitat around the lake's shoreline was also documented and categorized during this survey.

In addition to collecting ecological data from Mirror Lake, sociological data will be collected from the people who use and care for Mirror Lake. This will be approached in the form of a stakeholder survey which is being developed by Onterra staff and a planning committee comprised of MLD and Mirror Lake Association volunteers. This survey will be distributed to all district and association members.

In the coming months, Onterra will be sorting through the immense amount of water quality, aquatic plant, shoreline assessment and stakeholder survey data that has been collected. Additionally, we will be looking at the watershed surrounding the lake and using a modeling program to estimate the amount of nutrients the lake receives on an annual basis. We will also be working with the WDNR to collect data and report upon the management of the fishery.

In summary, all project components are on schedule. Following data analysis and report creation, the Mirror Lake Planning Committee and Onterra staff will meet to discuss the project results and begin creation of management goals and actions the MLD will pursue to manage their lake in both a recreationally enjoyable and ecologically sound manner.

B

APPENDIX B

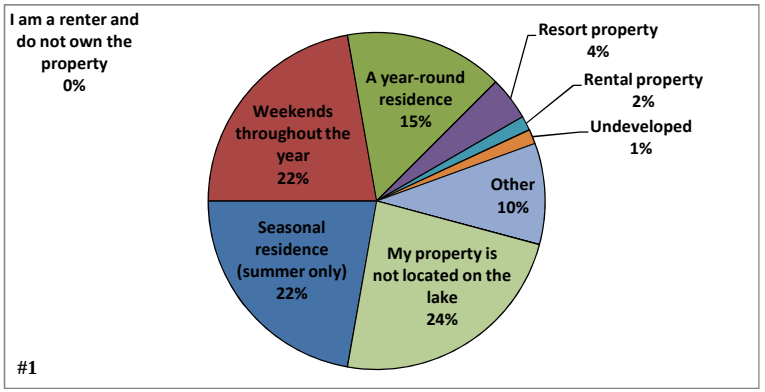
Stakeholder Survey Response Charts and Comments

Returned Surveys	77
Sent Surveys	237
Response Rate (%)	32.5

MIRROR LAKE PROPERTY

#1 How is your property on Mirror Lake utilized?

	Total	%
Seasonal residence (summer only)	16	*22.2*
Weekends throughout the year	16	*22.2*
A year-round residence	11	*15.3*
Resort property	3	*4.2*
Rental property	1	*1.4*
Undeveloped	1	*1.4*
Other	7	*9.7*
I am a renter and do not own the property	0	*0.0*
My property is not located on the lake	17	*23.6*
	72	*100.0*

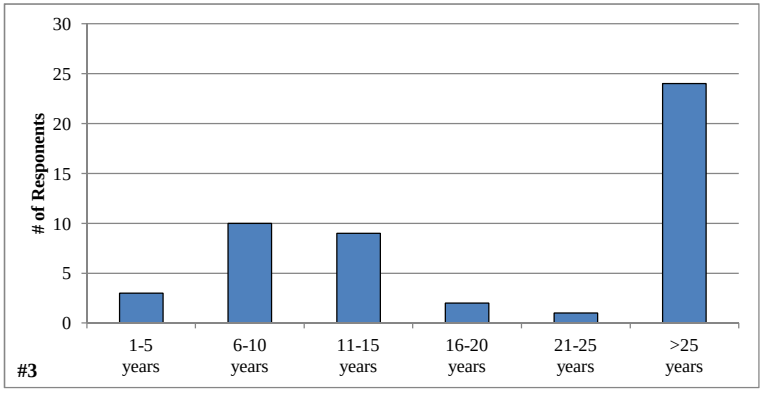


#2 How many days each year is your property used by you or others?

Answered Question	50
Average	163.0
Standard deviation	127.0

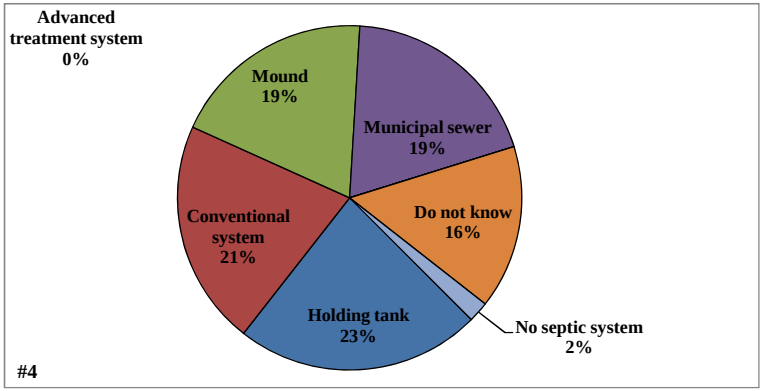
#3 How long have you owned or rented your property on Mirror Lake?

	Total	%
1-5 years	3	*6.1*
6-10 years	10	*20.4*
11-15 years	9	*18.4*
16-20 years	2	*4.1*
21-25 years	1	*2.0*
>25 years	24	*49.0*
	49	*100.0*



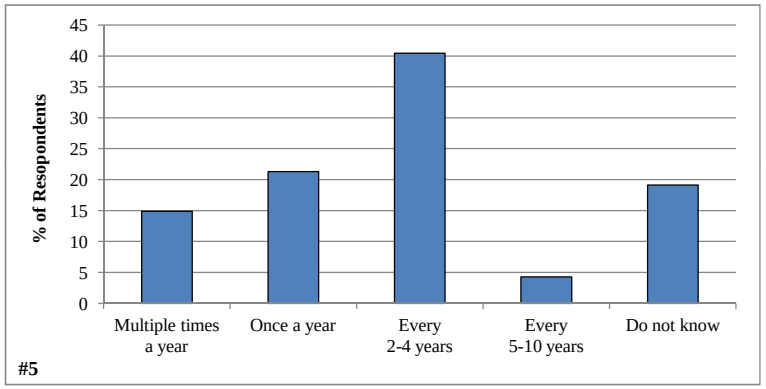
#4 What type of septic system does your property utilize?

	Total	%
Holding tank	12	*23.1*
Conventional system	11	*21.2*
Mound	10	*19.2*
Municipal sewer	10	*19.2*
Advanced treatment system	0	*0.0*
Do not know	8	*15.4*
No septic system	1	*1.9*
	52	*100.0*



#5 How often is the septic tank on your property pumped?

	Total	%
Multiple times a year	7	*14.9*
Once a year	10	*21.3*
Every 2-4 years	19	*40.4*
Every 5-10 years	2	*4.3*
Do not know	9	*19.1*
	47	*100.0*



#6 Approximately how old is your septic system?

Answered Question	26
Average	18.6
Standard deviation	14.1

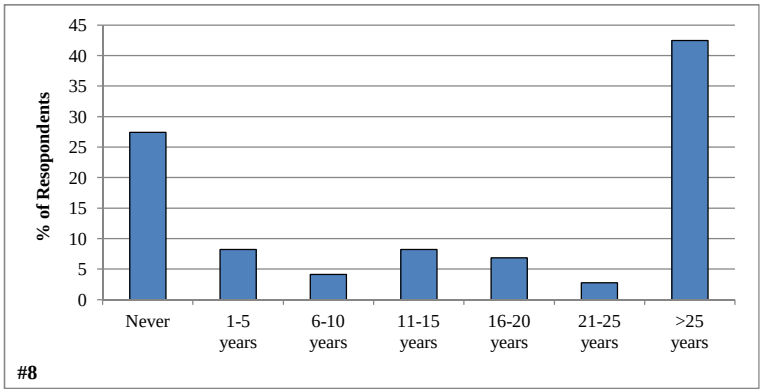
RECREATIONAL ACTIVITY ON MIRROR LAKE

#7 How many years ago did you first visit Mirror Lake?

Answered Question	76
Average	37.5
Standard deviation	21.2

#8 For how many years have you fished Mirror Lake?

	Total	%
Never	20	*27.4*
1-5 years	6	*8.2*
6-10 years	3	*4.1*
11-15 years	6	*8.2*
16-20 years	5	*6.8*
21-25 years	2	*2.7*
>25 years	31	*42.5*
	73	*100.0*

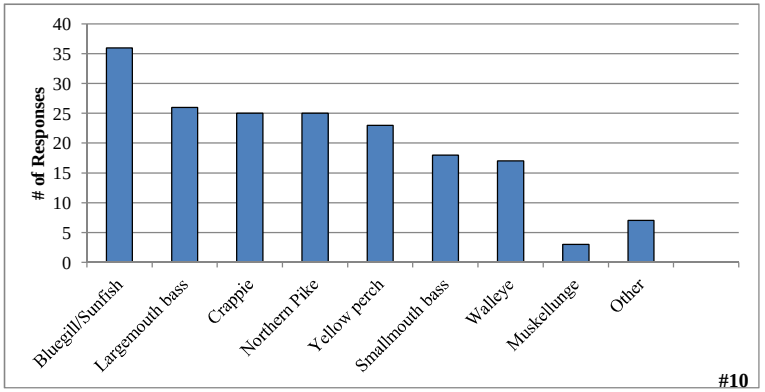


#9 Have you personally fished on Mirror Lake in the past three years?

	Total	%
Yes	42	*57.5*
No	31	*42.5*
	73	*100.0*

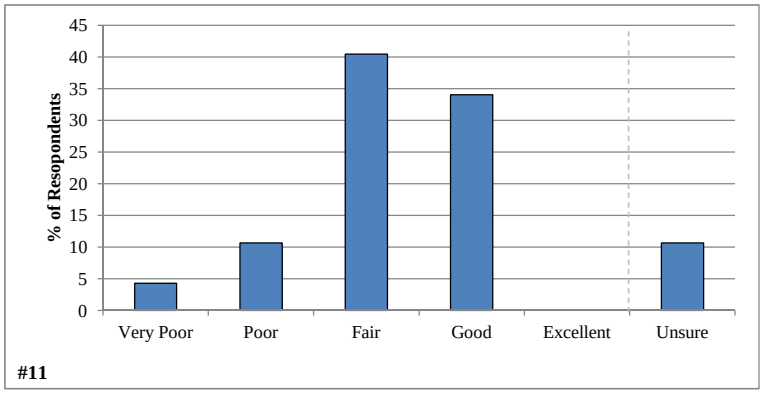
#10 What species of fish do you like to catch on Mirror Lake?

	Total
Bluegill/Sunfish	36
Largemouth bass	26
Crappie	25
Northern Pike	25
Yellow perch	23
Smallmouth bass	18
Walleye	17
Muskellunge	3
Other	7



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

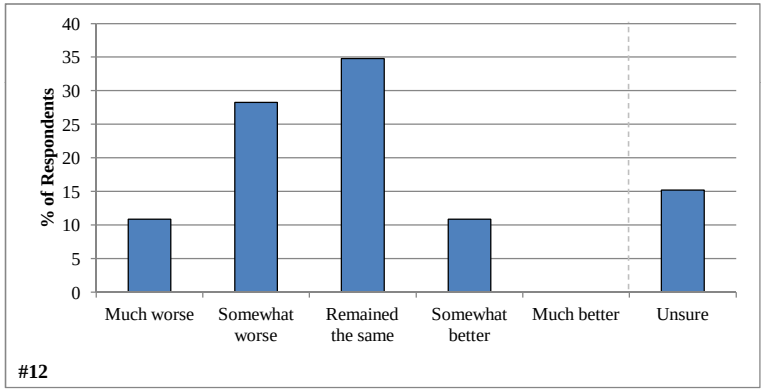
	Total	%
Very Poor	2	*4.3*
Poor	5	*10.6*
Fair	19	*40.4*
Good	16	*34.0*
Excellent	0	*0.0*
Unsure	5	*10.6*
	47	*100.0*



#11

#12 How has the quality of fishing changed since you started fishing on the lake?

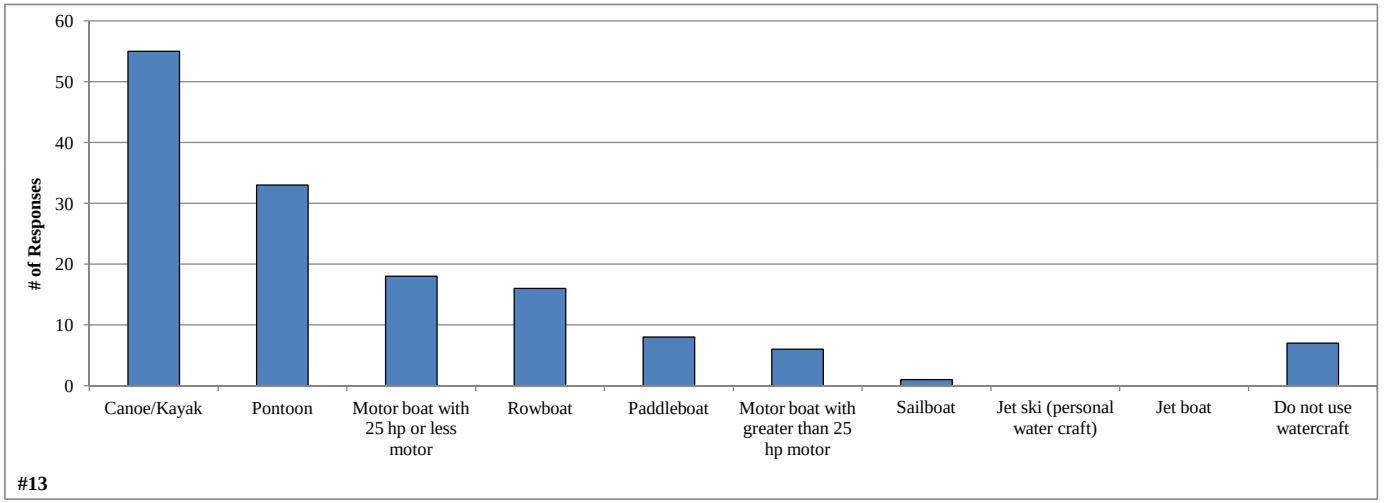
	Total	%
Much worse	5	*10.9*
Somewhat worse	13	*28.3*
Remained the Same	16	*34.8*
Somewhat better	5	*10.9*
Much better	0	*0.0*
Unsure	7	*15.2*
	46	*100.0*



#12

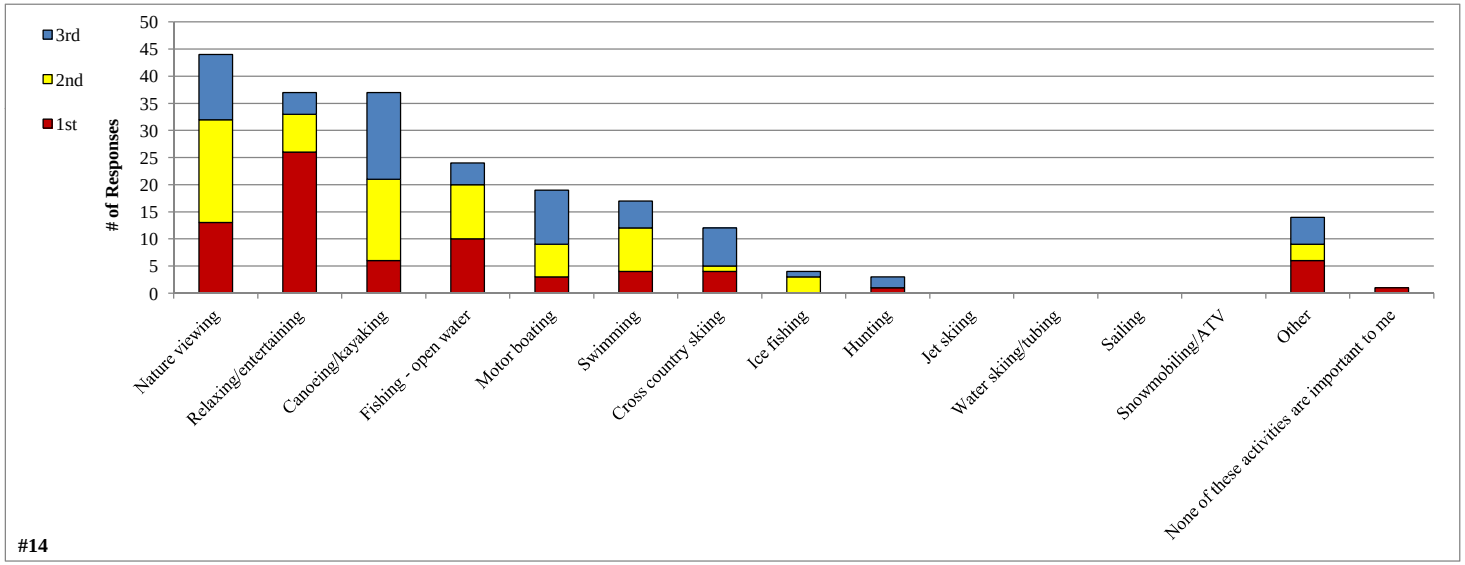
#13 What types of watercraft do you currently use on the lake?

	Total
Canoe/Kayak	55
Pontoon	33
Motor boat with 25 hp or less motor	18
Rowboat	16
Paddleboat	8
Motor boat with greater than 25 hp motor	6
Sailboat	1
Jet ski (personal water craft)	0
Jet boat	0
Do not use watercraft	7



#14 Please rank up to three activities that are important reasons for owning your property on or near the lake.

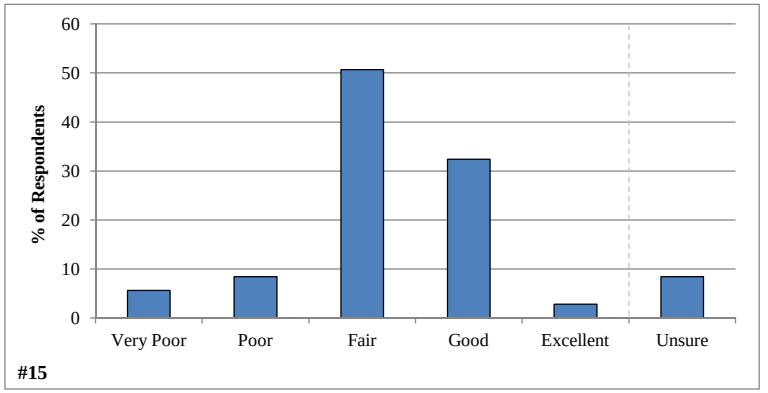
	1st	2nd	3rd	*% ranked*
Nature viewing	13	19	12	*20.8*
Relaxing/entertaining	26	7	4	*17.5*
Canoeing/kayaking	6	15	16	*17.5*
Fishing - open water	10	10	4	*11.3*
Motor boating	3	6	10	*9.0*
Swimming	4	8	5	*8.0*
Cross country skiing	4	1	7	*5.7*
Ice fishing	0	3	1	*1.9*
Hunting	1	0	2	*1.4*
Jet skiing	0	0	0	*0.0*
Water skiing/tubing	0	0	0	*0.0*
Sailing	0	0	0	*0.0*
Snowmobiling/ATV	0	0	0	*0.0*
Other	6	3	5	*6.6*
None of these activities are important to me	1	0	0	*0.5*
	74	72	66	*100.0*



MIRROR LAKE CURRENT AND HISTORIC CONDITION, HEALTH AND MANAGEMENT

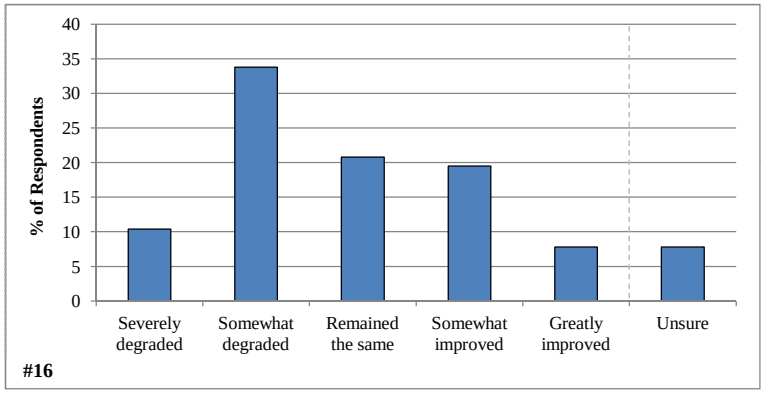
#15 How would you describe the current water quality of Mirror Lake?

	Total	%
Very Poor	4	*5.6*
Poor	6	*8.5*
Fair	36	*50.7*
Good	23	*32.4*
Excellent	2	*2.8*
Unsure	6	*8.5*
	71	*100.0*



#16 How has the water quality changed in Mirror Lake since you first visited the lake?

	Total	%
Severely degraded	8	*10.4*
Somewhat degraded	26	*33.8*
Remained the same	16	*20.8*
Somewhat improved	15	*19.5*
Greatly improved	6	*7.8*
Unsure	6	*7.8*
	77	*100.0*



#17 Have you ever heard of aquatic invasive species?

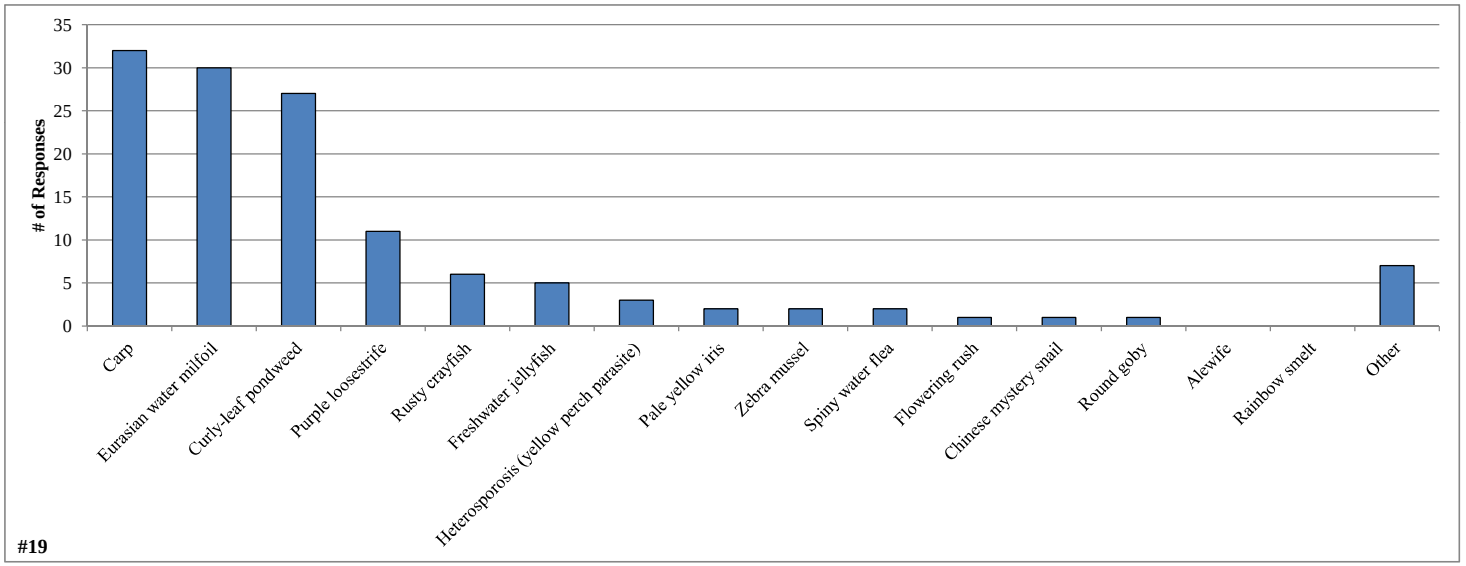
	Total	%
Yes	71	*92.2*
No	6	*7.8*
	77	*100.0*

#18 Are you aware of aquatic invasive species in Mirror Lake?

	Total	%
Yes	47	*66.2*
No	24	*33.8*
	71	*100.0*

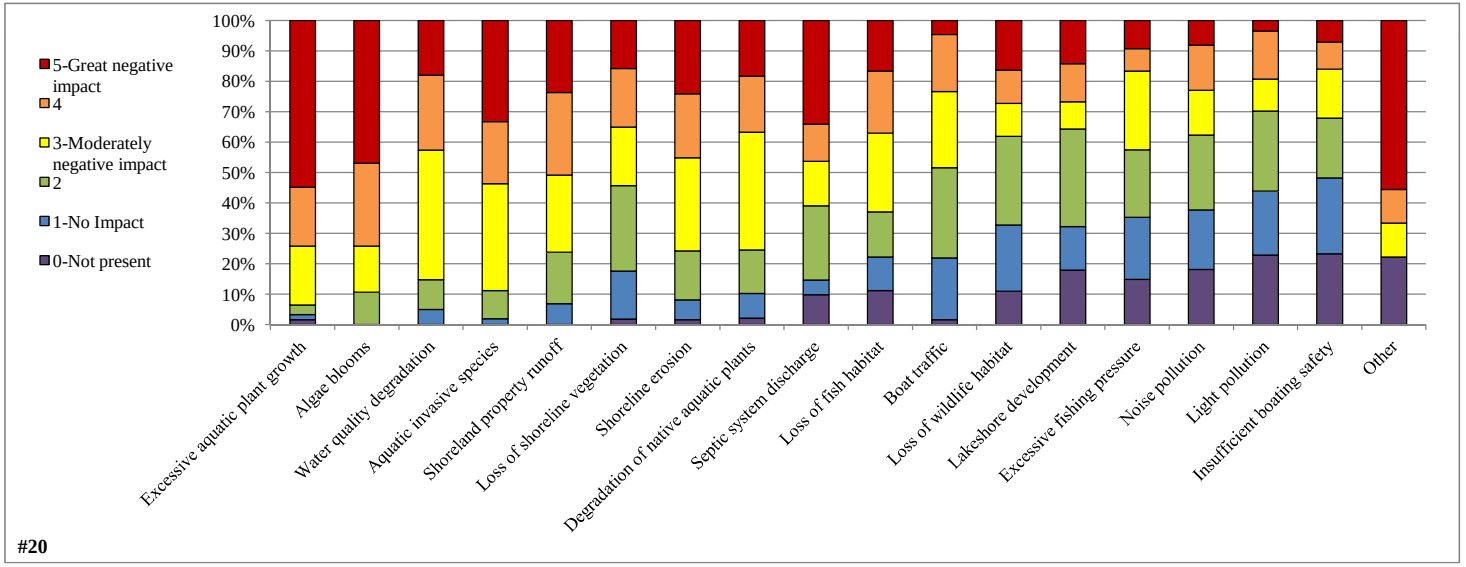
#19 Which aquatic invasive species are you aware of in Mirror Lake?

	Total
Carp	32
Eurasian water milfoil	30
Curly-leaf pondweed	27
Purple loosestrife	11
Rusty crayfish	6
Freshwater jellyfish	5
Heterosporosis (yellow perch parasite)	3
Pale yellow iris	2
Zebra mussel	2
Spiny water flea	2
Flowering rush	1
Chinese mystery snail	1
Round goby	1
Alewife	0
Rainbow smelt	0
Other	7



#20 To what level do you believe each of the following factors may be negatively impacting Mirror Lake?

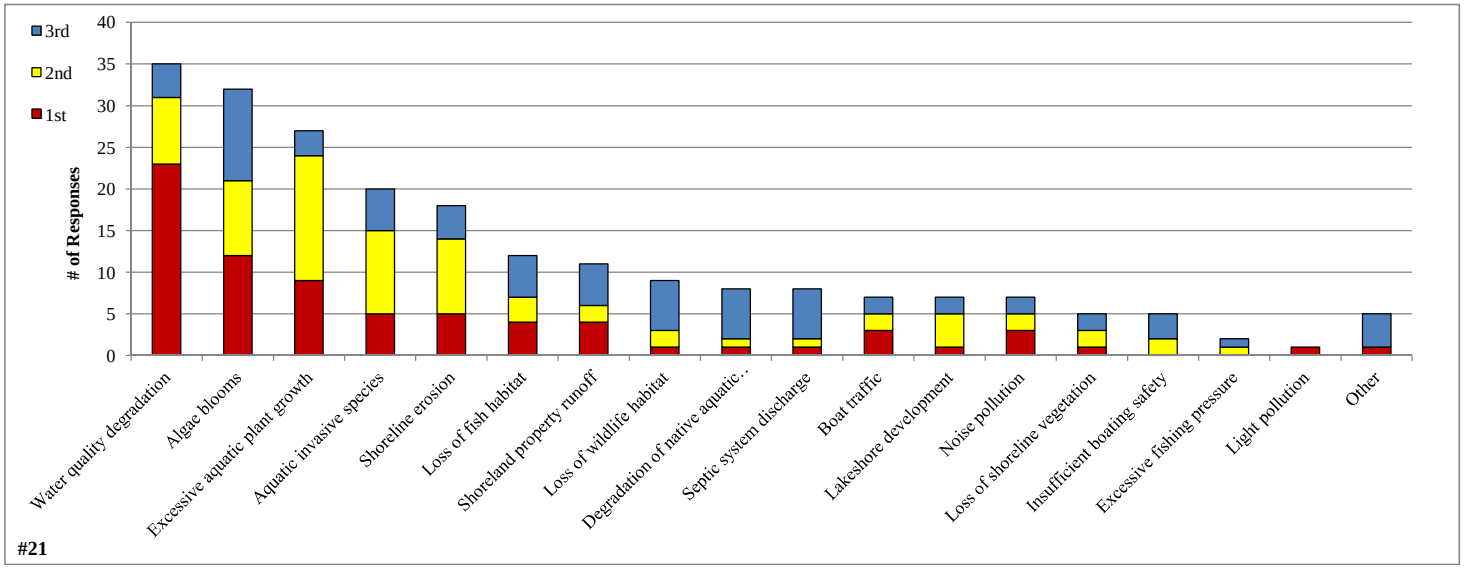
	0-Not present	1-No Impact	2	3-Moderately negative impact	4	5-Great negative impact	Unsure	*Total*	*Average*
Excessive aquatic plant growth	1	1	2	12	12	34	11	*61*	*4.2*
Algae blooms	0	0	7	10	18	31	7	*66*	*4.1*
Water quality degradation	0	3	6	26	15	11	9	*61*	*3.9*
Aquatic invasive species	0	1	5	19	11	18	15	*54*	*3.7*
Shoreland property runoff	0	4	10	15	16	14	13	*59*	*3.4*
Loss of shoreline vegetation	1	9	16	11	11	9	10	*56*	*3.4*
Shoreline erosion	1	4	10	19	13	15	7	*61*	*3.4*
Degradation of native aquatic plants	1	4	7	19	9	9	21	*48*	*3.2*
Septic system discharge	4	2	10	6	5	14	30	*37*	*3.2*
Loss of fish habitat	6	6	8	14	11	9	16	*48*	*2.8*
Boat traffic	1	13	19	16	12	3	7	*63*	*2.5*
Loss of wildlife habitat	6	12	16	6	6	9	15	*49*	*2.4*
Lakeshore development	10	8	18	5	7	8	13	*46*	*2.3*
Excessive fishing pressure	8	11	12	14	4	5	15	*46*	*2.2*
Noise pollution	11	12	15	9	9	5	8	*50*	*2.1*
Light pollution	13	12	15	6	9	2	12	*44*	*1.9*
Insufficient boating safety	13	14	11	9	5	4	13	*43*	*1.8*
Other	2	0	0	1	1	5	5	*7*	*3.6*



#20

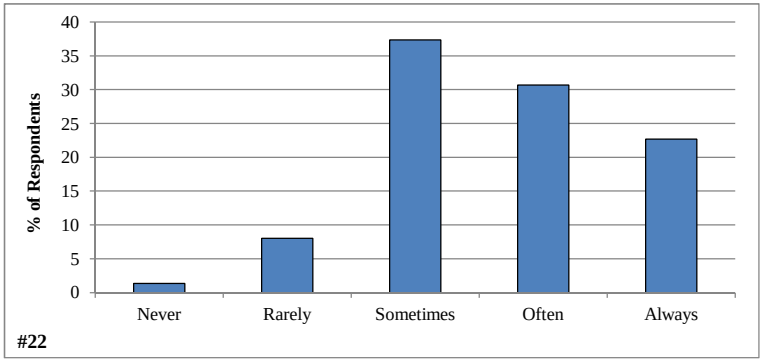
#21 From the list below, please rank your top three concerns regarding Mirror Lake.

	1st	2nd	3rd	*% Ranked*
Water quality degradation	23	8	4	*16.0*
Algae blooms	12	9	11	*14.6*
Excessive aquatic plant growth	9	15	3	*12.3*
Aquatic invasive species	5	10	5	*9.1*
Shoreline erosion	5	9	4	*8.2*
Loss of fish habitat	4	3	5	*5.5*
Shoreland property runoff	4	2	5	*5.0*
Loss of wildlife habitat	1	2	6	*4.1*
Degradation of native aquatic plants	1	1	6	*3.7*
Septic system discharge	1	1	6	*3.7*
Boat traffic	3	2	2	*3.2*
Lakeshore development	1	4	2	*3.2*
Noise pollution	3	2	2	*3.2*
Loss of shoreline vegetation	1	2	2	*2.3*
Insufficient boating safety	0	2	3	*2.3*
Excessive fishing pressure	0	1	1	*0.9*
Light pollution	1	0	0	*0.5*
Other	1	0	4	*2.3*
	75	73	71	*100.0*



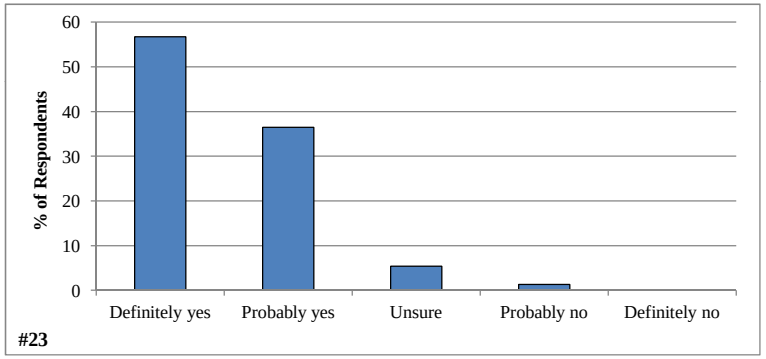
#22 During open water season how often does aquatic plant growth, including algae, negatively impact your enjoyment of the lake?

	Total	%
Never	1	*1.3*
Rarely	6	*8.0*
Sometimes	28	*37.3*
Often	23	*30.7*
Always	17	*22.7*
	75	*100.0*



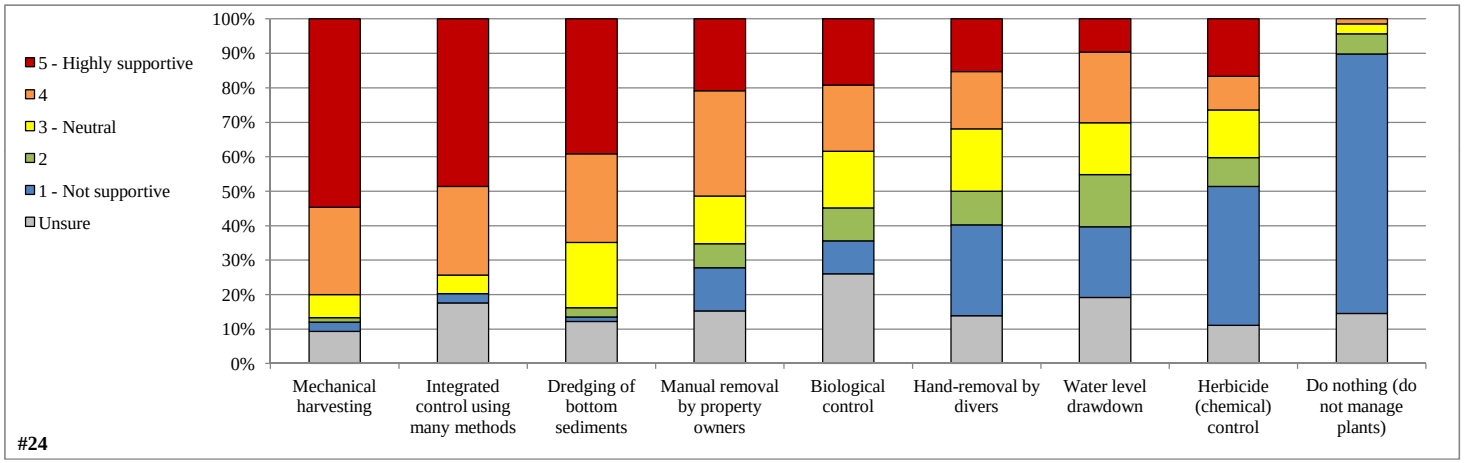
#23 Considering your answer to the question #22, do you believe aquatic plant control is needed on Mirror Lake?

	Total	%
Definitely yes	42	*56.8*
Probably yes	27	*36.5*
Unsure	4	*5.4*
Probably no	1	*1.4*
Definitely no	0	*0.0*
	74	*100.0*



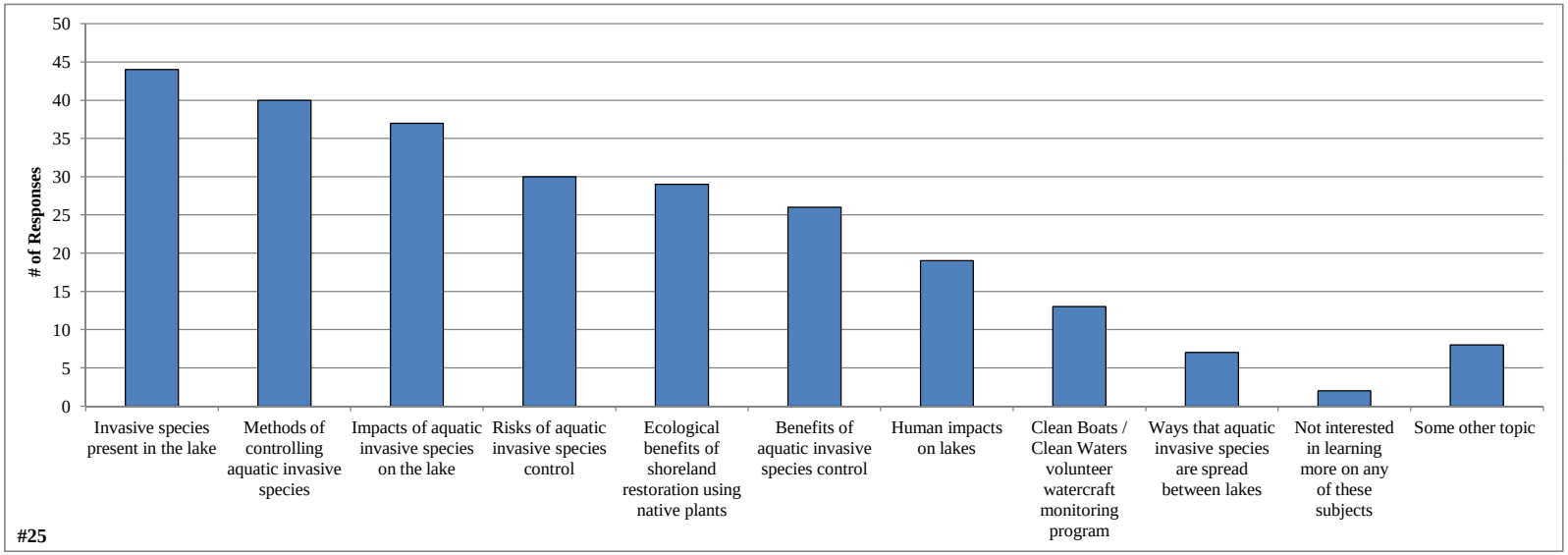
#24 Aquatic plants can be professionally managed using many techniques. What is your level of support for the responsible use of the following techniques on Mirror Lake?

	1 - Not supportive	2	3 - Neutral	4	5 - Highly supportive	Unsure	Total	Average
Mechanical harvesting	2	1	5	19	41	7	*68*	*5.2*
Integrated control using many methods	2	0	4	19	36	13	*61*	*4.4*
Dredging of bottom sediments	1	2	14	19	29	9	*65*	*4.1*
Manual removal by property owners	9	5	10	22	15	11	*61*	*3.5*
Biological control	7	7	12	14	14	19	*54*	*3.4*
Hand-removal by divers	19	7	13	12	11	10	*62*	*2.8*
Water level drawdown	15	11	11	15	7	14	*59*	*2.8*
Herbicide (chemical) control	29	6	10	7	12	8	*64*	*2.5*
Do nothing (do not manage plants)	52	4	2	1	0	10	*59*	*1.2*



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

	Total
Invasive species present in the lake	44
Methods of controlling aquatic invasive species	40
Impacts of aquatic invasive species on the lake	37
Risks of aquatic invasive species control	30
Ecological benefits of shoreland restoration using native plants	29
Benefits of aquatic invasive species control	26
Human impacts on lakes	19
Clean Boats / Clean Waters volunteer watercraft monitoring program	13
Ways that aquatic invasive species are spread between lakes	7
Not interested in learning more on any of these subjects	2
Some other topic	8



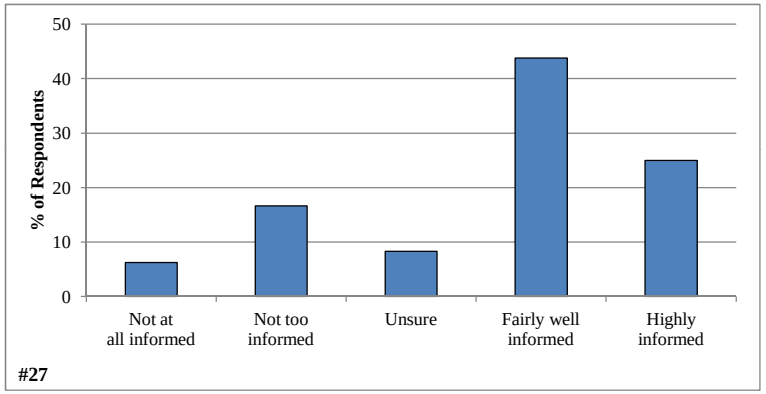
MIRROR LAKE MANAGEMENT DISTRICT AND MIRROR LAKE ASSOCIATION

#26 How would you describe your membership status with the following organizations?

	Total	%
Member of the Mirror Lake District only	1	*1.4*
Member of the Mirror Lake Association only	25	*34.2*
Member of both the Mirror Lake District and the Mirror Lake Association	29	*39.7*
Not a member of either the Mirror Lake District or the Mirror Lake Association	18	*24.7*
	73	*100.0*

#27 How informed has the Mirror Lake Management District kept you regarding issues with Mirror Lake and its management?

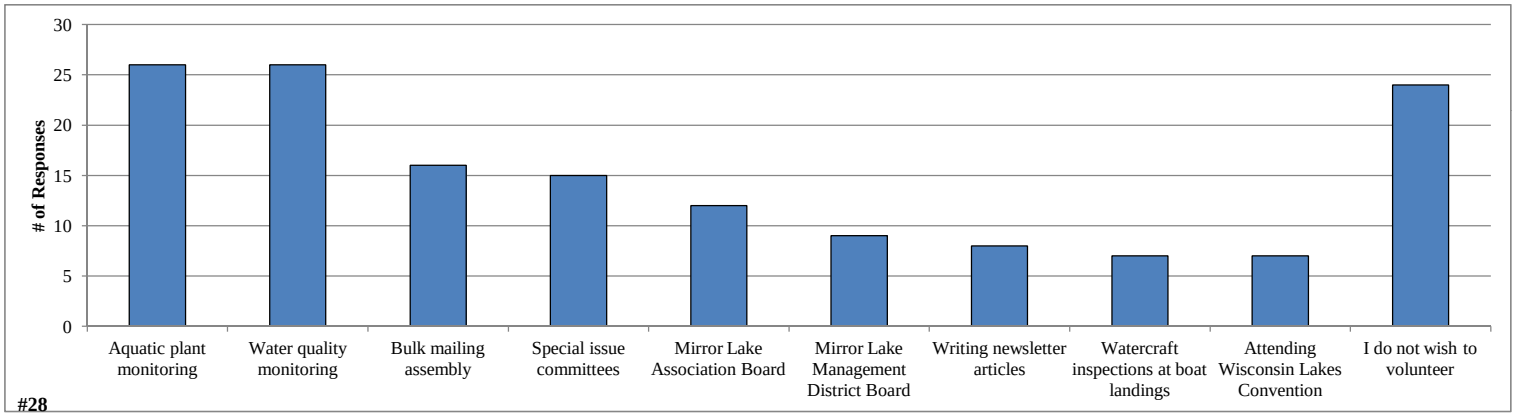
	Total	%
Not at all informed	3	*6.3*
Not too informed	8	*16.7*
Unsure	4	*8.3*
Fairly well informed	21	*43.8*
Highly informed	12	*25.0*
	48	*100.0*



#27

#28 Please circle the activities you would be willing to participate in if the Mirror Lake Management District or Mirror Lake Association requires additional assistance.

	Total
Aquatic plant monitoring	26
Water quality monitoring	26
Bulk mailing assembly	16
Special issue committees	15
Mirror Lake Association Board	12
Mirror Lake Management District Board	9
Writing newsletter articles	8
Watercraft inspections at boat landings	7
Attending Wisconsin Lakes Convention	7
I do not wish to volunteer	24



Survey Number	1g Comment	10i Comment	14n Comment	19p Comment	20r Comment	21r Comment	Other Comments (and Question 29)
1							Love Mirror Lake: Hate development that disturbs natural habitat & vegetation. No more development around lake. Also limit hunting. I am mow rather afraid to walk or kayak. I would absolutely volunteer to help.
2							
3							Aquatic plant management is a critical issue for Mirror Lake given the algae growth which reduces the beauty & navigation of the lake. Property owners are willing to do what is needed. Keep us informed on how we can manage our shoreline to enhance the lake water quality. Having been on this lake for over 50+ years, it has changed in the better (canoe traffic vs. fast motor boats) with speed controls & more natural shorelines. Development is minimal & we love kayaks & canoe traffic vs. jet skis!! But water quality has degraded from a true "mirror" lake to a weedy lake. We understand less chemicals in our lake is a good thing, but need to balance keeping invasive species & significant algae growth to a minimum. Thank you for all the hard work of the Mirror Lake Association & Lake District Board.
4							My ideal vision would include the following: - Restore water levels to the pre 1968 levels. A deeper lake would reduce the temperature and help control algae blooms. - I recommend dredging the entire upper end to a depth of 7' for the same reason previously mentioned. - I recommend using the dredged materials in shallow shoreline areas to include the turtle bay area to increase the usable land mass.
5							
6							
7							
8							
9							By mid summer the duckweed & milfoil makes my shoreline fairly unpleasant & fishing from shore very difficult. Better weed maintenance near the shore would be very desirable. Walking on the lake in winter is delightful.
10							
11							
12							
13							
14				Garlic Mustard			
15							We need to get rid of the weeds in lake that catch duck weed.
16	Do not own property						
17							
18				duck weed		Speeding boats	
19							Lake quality overall is good, better than the past. It would be nice to have a downed timber collection site to remove & dispose of downed trees & limbs.
20							
21							
22							I totally disagree with the concept of not removing trees that fall into the lake from your property. I also disagree with not using proven safe chemicals and other methods of controlling duck weed on the lake which I think is the most important problem to address. Mirror Lake in the 50's & 60's was the most admitted and beautiful lake around the area. Growing up on Lake Delton I did not see any harmful affect of chemical use for plant control and I am sure modern science has vastly improved the process. It's very hard to live up to the name when the mirror is covered with duck weed. Talking to people who don't live on the lake , the thing I hear the most is how unattractive the duck weed has made the lake.
23		There are no longer any fish on Mirror Lake		duck weed			Since the water level in Mirror Lake has dropped dramatically, fishing absolutely stinks! We used to catch bluegills near Ishnala and Northern near the mouth of Pickerel Slough - GONE! Too many fishermen from the state park taking what tiny fish they can catch is a large part of the problem - a game warden should watch what they are taking.

Survey Number	1g Comment	10i Comment	14n Comment	19p Comment	20r Comment	21r Comment	Other Comments (and Question 29)
24		don't care - catch & release					
25			family time				
26							
27							1- I live about 1000miles from Mirror Lake. At this time I am not sure just how much time I will be up there. When I do get to spend time up on Mirror Lake, I would be happy to do whatever I can. 2- I would encourage commercial establishments on Mirror Lake (e.g. Yogi Bear) to provide their guests with some guidelines on ecology of the lake, and security of lake properties (private properties).
28							
29			snow shoeing				
30	We have no property			We know that there are, but we don't know what			
31					high speed boating		High speed an dangerous boating has seriously & negatively impacted the: #1 ability to enjoy small boating (row boat) and kayaking #2 shoreline (plants & animals) and #3 overall enjoyment of the lake.
32							
33							
34							I think that the things that I would most like to see in my ideal vision of Mirror Lake would be mostly in the preservation aspects: #1 continued dredging/removal of sediment which is filling the lake in #2 H2O quality improvement #3 Reduction of weeds #4 Better monitoring of boats violating no wake rules. Fines when caught. No more "honor policy" #5 Removal/Reduction of carp - restocking of fish population or improving conditions for other natural restocking. #6 Invasive species control - both land and water
35		Bullhead					The lake is man made, we have to deal with it. Remove the dam---then the area will be all natural as it was before man interfered with "mother nature"
36			Quiet				
37							
38			hiking				
39							
40							
41							
42							
43			Don't allow snowmobiles/ATV				Q13-Don't mislead people that they can use jet ski or jet boat on lake Q20-major cause of problems are d, I, o, Must close down Seth Peterson cottage. Q25-educational presentations are no good as they are slanted by the ignorant liberal presenter and not truthful or accurate. Q28 - will not volunteer because more of you liberals listen to those of us who are knowledgeable & conservative.
44							
45							
46							
47				too much duck weed			
48	camper/visitor						We love to camp, hike, kayak, and cross country ski at Mirror Lake especially in the fall, winter and spring. At times (fall 2011 and before) the lake was beautiful (like a mirror) for kayaking. Last fall 2012 the lake was so full of algae that you couldn't hardly see the water or the fall plants that get tangled up in your paddle. The staff is particularly helpful and pleasant and it is a joy in winter to see the ice fishermen and snowshoe/ski on the lake's ice. The eagles are also a joy to see. I love the 3 night hikes/ski that they have in Oct/Jan/Feb and travel from Illinois to attend. I would like to see the lake become clearer of algae and plants and remain a quiet, tranquil place for kayaks, canoes, and rowboats for the fishermen - no large motors on the lake at all.
49							

Survey Number	1g Comment	10i Comment	14n Comment	19p Comment	20r Comment	21r Comment	Other Comments (and Question 29)
50	2nd residence - full summer & weekends throughout year				Duckweed	Duckweed	Seriously, the duckweed has gotten to be a huge problem. I love to swim in lakes, especially Mirror Lake, and have for over 50 years. It is almost impossible to swim out from the back of Pickerel Slough. Boaters can no longer travel to the end of the slough - even canoeists and kayakers get stuck. Fishing from the back 1/2 of the slough is almost impossible. From the end of May to frost, the end of the slough (1/3 of the slough) is covered with a thick lawn of duckweed. People remark that it looks like a putting green. When the duckweed dies, it sinks. There is no longer a sand bottom at the end of the slough. Waders sink to their thighs in muck. The slough no longer freezes solidly. An important feature of the lake is rapidly degrading and advice/help is needed.
51							
52							I think the booms were useful. I appreciate the mechanical harvesting. I appreciate all the efforts to reduce development of the shoreline and rehabilitate areas. Thank you.
53							
54					Water shed degradation		Maintain or reduce current level of shoreline development, continue shoreline stabilization, manage for a wide variety or recreational uses.
55							Would like to see a process to keep channel going into Dell Creek more navigable for small boats and canoes. Dell Creek is a gem, but hard to enter from Lake View launch at times.
56			Hiking & snow shoeing				
57							
58							
59							I am so appreciative of the devotion & profound dedication, hours of service that so many board members (past & present) have invested into preserving our beautiful lake. I am in awe of Waldo Peterson's history of loving our lake & his tireless endeavors to conserve Mirror Lake's integrity. Thank you.
60			Snowshoeing & hiking				
61							It's hard to imagine what Mirror Lake would look like if it were not for the work of the MLA & the MLMD - While many lakes across Wisconsin have deteriorated over the years, Mirror Lake retains much the same as when first came to the lake. Duckweed has always and continues to be a problem and hopefully it can be better controlled in the future. Sediment entering the lake from the land upstream and from properties around the lake is an even bigger problem and must be continuously addressed.
62							
63							
64	Do not own property						M.L. should be an ecosystem which supports the wildlife of the area and supports human use in a responsible manner. MLA is currently doing positive, proactive actions to ensure the health of the lake. Thank you
65				sediments	debris, fallen trees in water, impales boat traffic & water flow.		Of concern to me is the accumulation of lake bottom muck. Excessive plant growth in the lake. The waterways are choked with fallen logs, trees, and sediments. It is difficult to motor a boat through all the aquatic plants in the lake currently. Mirror Lake is our favorite place to send time outdoors.
66			Hiking/geocoding				
67		trout					
68	Seth Peterson Cottage						
69							Has improved since we were first here 20 years ago. Have not fished for a few years. Keep up the good work.
70							
71							

Survey Number	1g Comment	10i Comment	14n Comment	19p Comment	20r Comment	21r Comment	Other Comments (and Question 29)
72		Carp Trout					Lake water years ago was 6-8 inches higher, which gave better spawning on upper end. Nice to see that again. We could also take more "black mud" off bottom of upper end. In 1960s the upper end was sand 8 foot deep with perfect vegetation - cabbage leaf - awesome for spawning fish and water quality for down stream. Good survey! Thank you!
73							Water quality is my biggest concern. When I moved here in 2007 I went swimming often. The last few years I have been hesitant to get in the water at all. And the weeds seem to be much worse. I would volunteer for more things in question #28 but I'm not really qualified to do any of those things listed.
74							Thanks for all that you do. Please help keep Mirror Lake a great place!
75			Snowshoeing & camping				I am only a member of the Friends of Mirror Lake. I live several miles away. I like to participate in winter activities. I like camping & picnicking. I am quite busy with my job and do not have very much spare time.
76				Duckweed			Thanks for all your trying to do to clean up the lake, when in fact mother nature has made it "unmanageable"!
77							
78							

C

APPENDIX C

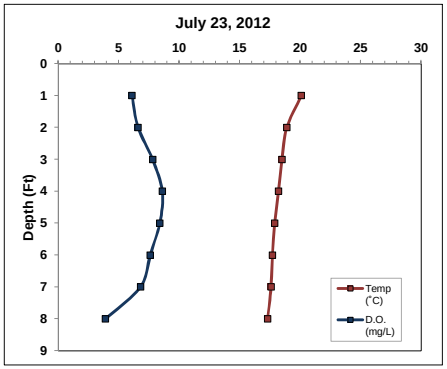
Water Quality Data

Mirror Lake - West Basin

Date: 7/23/2012
Time: 9:25
Weather:
Entry: EEC

Max Depth: 8.9
MLWBS Depth (ft): 3.0
MLWBB Depth (ft): 7.0
Secchi Depth (ft): 7.4

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	20.1	6.1	7.3	
2	18.9	6.6	7.4	
3	18.5	7.8	7.5	
4	18.2	8.6	7.7	
5	17.9	8.4	7.7	
6	17.7	7.6	7.7	
7	17.6	6.8	7.7	
8	17.3	3.9	7.6	



Parameter	MLWBS	MLWBB
Total P (µg/L)	67.00	171.00
Dissolved P (µg/L)	ND	39.00
Chl-a (µg/L)	40.00	NA
TKN (µg/L)	660.00	540.00
$NO_3 + NO_2$-N (µg/L)	552.00	1260.00
NH_3-N (µg/L)	41.00	191.00
Total N (µg/L)	1212.00	1800.00
Lab Cond. (µS/cm)	267.00	277.00
Lab pH	8.25	7.80
Alkalinity (mg/L $CaCO_3$)	119.00	122.00
Total Susp. Solids (mg/L)	6.00	5.00
Calcium (mg/L)	25.30	NA
Magnesium (mg/L)	13.30	NA
Hardness (mg/L)	118.00	NA
Color (SU)	10.00	NA
Turbidity (NTU)	NA	NA

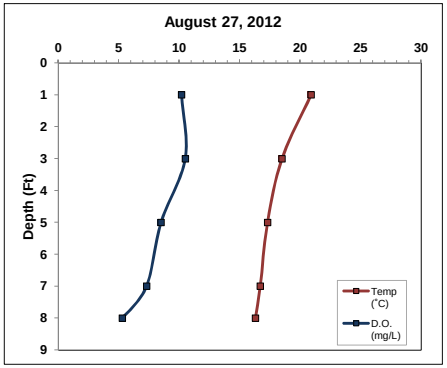
Data collected by BTB (Onterra)

Mirror Lake - West Basin

Date: 8/27/2012
Time: 15:30
Weather: 85F, sunny, no winc
Entry: EEC

Max Depth: 9.7
MLWBS Depth (ft): 3.0
MLWBB Depth (ft): 7.0
Secchi Depth (ft): 3.6

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	20.9	10.2	7.8	
3	18.5	10.5	7.9	
5	17.3	8.5	7.7	
7	16.7	7.3	7.7	
8	16.3	5.3	7.7	



Parameter	MLWBS	MLWBB
Total P (µg/L)	338.00	288.00
Dissolved P (µg/L)	NA	NA
Chl-a (µg/L)	229.00	NA
TKN (µg/L)	NA	NA
$NO_3 + NO_2$-N (µg/L)	NA	NA
NH_3-N (µg/L)	NA	NA
Total N (µg/L)	NA	NA
Lab Cond. (µS/cm)	NA	NA
Lab pH	NA	NA
Alkalinity (mg/L $CaCO_3$)	NA	NA
Total Susp. Solids (mg/L)	NA	NA
Calcium (mg/L)	NA	NA
Magnesium (mg/L)	NA	NA
Hardness (mg/L)	NA	NA
Color (SU)	NA	NA
Turbidity (NTU)	NA	NA

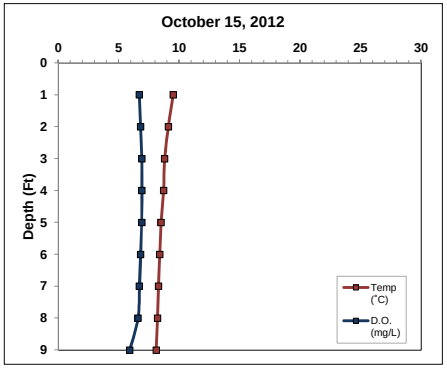
Data collected by DAC and EEC (Onterra)

Mirror Lake - West Basin

Date: 10/15/2012
Time: 10:52
Weather: 45F, 100% sun, light winc
Entry: EEC

Max Depth: 9.8
MLWBS Depth (ft): 3.0
MLWBB Depth (ft): 7.0
Secchi Depth (ft): 2.8

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	9.5	6.7	6.8	
2	9.1	6.8	6.9	
3	8.8	6.9	6.9	
4	8.7	6.9	6.9	
5	8.5	6.9	6.9	
6	8.4	6.8	7.0	
7	8.3	6.7	7.0	
8	8.2	6.6	7.0	
9	8.1	5.9	7.1	



Parameter	MLWBS	MLWBB
Total P (µg/L)	218.00	255.00
Dissolved P (µg/L)	NA	NA
Chl-a (µg/L)	1.49	NA
TKN (µg/L)	NA	NA
$NO_3 + NO_2$-N (µg/L)	NA	NA
NH_3-N (µg/L)	NA	NA
Total N (µg/L)	NA	NA
Lab Cond. (µS/cm)	NA	NA
Lab pH	NA	NA
Alkalinity (mg/L $CaCO_3$)	NA	NA
Total Susp. Solids (mg/L)	5.00	19.00
Calcium (mg/L)	NA	NA
Magnesium (mg/L)	NA	NA
Hardness (mg/L)	NA	NA
Color (SU)	NA	NA
Turbidity (NTU)	NA	NA

Data collected by BTB and EJG (Onterra)

Water Quality Data

2012	Surface		Bottom	
Parameter	Count	Mean	Count	Mean
Secchi Depth (feet)	3	4.6	NA	NA
Total P (µg/L)	3	207.7	3	238.0
Dissolved P (µg/L)	1	ND	1	39.0
Chl a (µg/L)	3	90.2	0	NA
TKN (µg/L)	1	660.0	1	540.0
NO3+NO2-N (µg/L)	1	552.0	1	1260.0
NH3-N (µg/L)	1	41.0	1	191.0
Total N (µg/L)	1	1212.0	1	1800.0
Lab Cond. (µS/cm)	1	267.0	1	277.0
Lab pH	1	8.3	1	7.8
Alkalinity (mg/l CaCO3)	1	119.0	1	122.0
Total Susp Sol (mg/l)	2	5.5	2	12.0
Calcium (µg/L)	1	25.3	0	NA
Magnesium (mg/L)	1	13.3	0	NA
Hardness (mg/L)	1	118.0	0	NA
Color (SU)	1	10.0	0	NA
Turbidity (NTU)	0	NA	0	NA

Trophic State Index (TSI)

Year	TP	Chl-a	Secchi
1975			57.9
1976			
1977			
1980		59.9	56.5
1992		59.0	
1993		53.5	
1994			56.1
2001			53.4
2004			
2007			53.4
2008			66.0
2009			55.1
2012	80.7	78.7	52.6
All Years (Weighted)	73.4	63.0	55.8
allow, Lowland Drainage La	54.6	52.6	52.4
SWTP Ecoregion	48.7	47.0	50.0

Morphological / Geographical Data

Parameter	Value
Acreage	141.0
Volume (acre-feet)	709.0
Perimeter (miles)	8.4
Shoreland Developmetnt Factor	25.5
Maximum Depth (feet)	15.0
County	Sauk
WBIC	1296000.0

Watershed Data

WiLMS Class	Acreage	kg/yr	lbs/yr
Forest	18,336	668	1,473
Open Water	141	17	37
Pasture/Grass	7,243	879	1,938
Row Crops	15,347	6,211	13,693
Urban - Medium Density	53	11	24
Urban - Rural Residential	423	17	37
Urban- High Density	56	34	75
Wetlands	1,228	46	101

Watershed to Lake Area 12.58402778

	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
1975	2	3.9	1	3.8					2	120.0	1.0	90.0
1976	1	3.0	0						1	80.0	0.0	
1977	1	3.0	0						1	60.0	0.0	
1980	2	4.2	2	4.2	4	19.8	4	19.8				
1992					1	18.0	1	18.0				
1993	8	5.8	4	5.3	14	7.6	8	10.3	10	103.0	7.0	114.1
1994	7	4.6	5	4.3	2	11.3	2	11.3	2	84.0	2.0	84.0
2001	4	5.2	4	5.2	1	35.0	1	35.0				
2004					3	19.5	2	18.2	2	82.0	0.0	
2007	8	5.2	5	5.2								
2008	9	1.9	6	2.2								
2009	8	4.5	6	4.6								
2012	3	4.6	2	5.5	3	90.2	2	134.5	3	207.7	2.0	202.5
All Years (Weighted)		4.3		4.4		21.1		27.1		112.6		121.8
Shallow, Lowland Drainage Lakes SWTP Ecoregion				5.6				9.4				33.0
				6.6				5.3				22.0

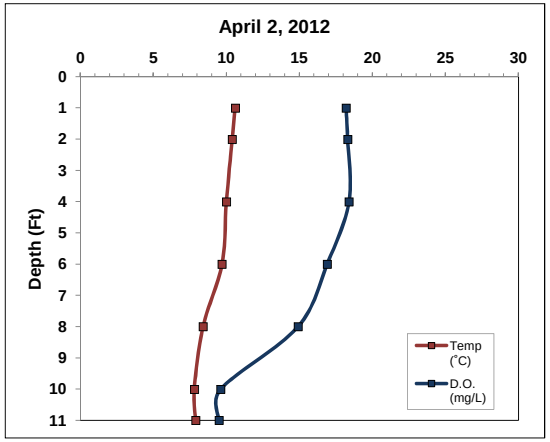
July 2012 N	1212.0
July 2012 P	67.0
Summer 2012 N:P	18 :1

Mirror Lake - North Basin

Date: 4/2/2012
Time: 2:45
Weather: full sun, light wind, 54°
Entry: TWH

Max Depth: 11.8
MLNBS Depth (ft): 3.0
MLNBB Depth (ft): 9.0
Secchi Depth (ft): 2.2

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	10.6	18.2	9.0	
2	10.4	18.3	9.2	
4	10.0	18.4	9.3	
6	9.7	16.9	9.3	
8	8.4	14.9	9.2	
10	7.8	9.6	8.9	
11	7.9	9.5		



Parameter	MLNBS	MLNBB
Total P (µg/L)	79.00	92.00
Dissolved P (µg/L)	5.00	8.00
Chl-*a* (µg/L)	114.00	NA
TKN (µg/L)	930.00	790.00
$NO_3 + NO_2$-N (µg/L)	639.00	932.00
NH_3-N (µg/L)	ND	28.00
Total N (µg/L)	1569.00	1722.00
Lab Cond. (µS/cm)	233.00	211.00
Lab pH	9.15	7.76
Alkalinity (mg/L $CaCO_3$)	96.20	82.00
Total Susp. Solids (mg/L)	13.00	9.00
Calcium (mg/L)	24.60	NA
Magnesium (mg/L)	12.00	NA
Hardness (mg/L)	111.00	NA
Color (SU)	20.00	NA
Turbidity (NTU)	5.30	NA

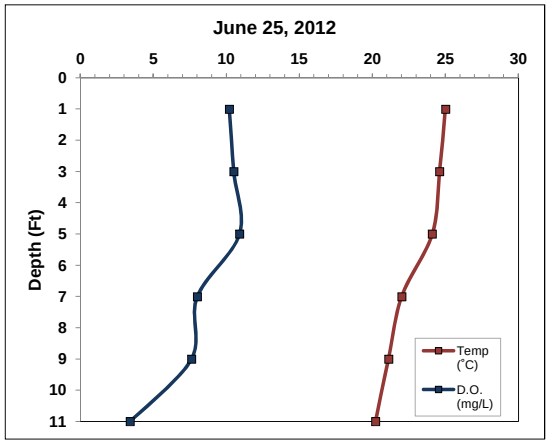
Data collected by TAH and BTB (Onterra)

Mirror Lake - North Basin

Date: 6/25/2012
Time: 16:35
Weather: sunny, 79F
Entry: EEC

Max Depth: 11.6
MLNBS Depth (ft): 3.0
MLNBB Depth (ft): 9.0
Secchi Depth (ft): 7.4

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	25.0	10.2	8.8	
3	24.6	10.5		
5	24.1	10.9	8.6	
7	22.0	8.0		
9	21.1	7.6	8.2	
11	20.2	3.4		



Parameter	MLNBS	MLNBB
Total P (µg/L)	50.00	98.00
Dissolved P (µg/L)	NA	NA
Chl-a (µg/L)	12.00	NA
TKN (µg/L)	NA	NA
$NO_3 + NO_2$-N (µg/L)	NA	NA
NH_3-N (µg/L)	NA	NA
Total N (µg/L)	NA	NA
Lab Cond. (µS/cm)	NA	NA
Lab pH	NA	NA
Alkalinity (mg/L $CaCO_3$)	NA	NA
Total Susp. Solids (mg/L)	NA	NA
Calcium (mg/L)	NA	NA
Magnesium (mg/L)	NA	NA
Hardness (mg/L)	NA	NA
Color (SU)	NA	NA
Turbidity (NTU)	NA	NA

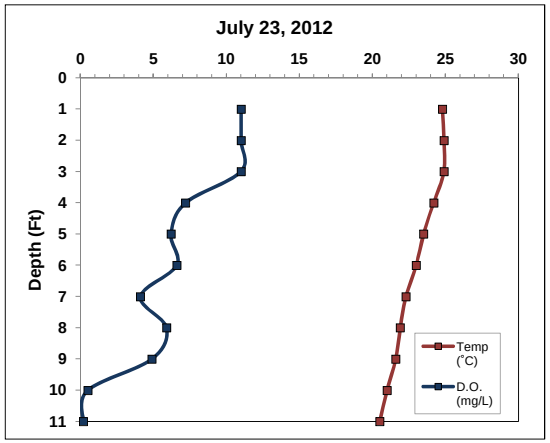
Data collected by EJH and TWH (Onterra)

Mirror Lake - North Basin

Date: 7/23/2012
Time: 8:20
Weather:
Entry: EEC

Max Depth: 11.8
MLNBS Depth (ft): 3.0
MLNBB Depth (ft): 9.0
Secchi Depth (ft): 4.8

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	24.8	11.0	8.9	
2	24.9	11.0	8.9	
3	24.9	11.0	8.9	
4	24.2	7.2	8.4	
5	23.5	6.2	8.1	
6	23.0	6.6	8.1	
7	22.3	4.1	7.8	
8	21.9	5.9	7.8	
9	21.6	4.9	7.8	
10	21.0	0.5	7.7	
11	20.5	0.2	7.5	



Parameter	MLNBS	MLNBB
Total P (µg/L)	89.00	107.00
Dissolved P (µg/L)	48.00	21.00
Chl-*a* (µg/L)	99.00	NA
TKN (µg/L)	ND	510.00
$NO_3 + NO_2$-N (µg/L)	1610.00	840.00
NH_3-N (µg/L)	23.00	175.00
Total N (µg/L)	1610.00	1350.00
Lab Cond. (µS/cm)	272.00	269.00
Lab pH	7.91	7.93
Alkalinity (mg/L $CaCO_3$)	120.00	118.00
Total Susp. Solids (mg/L)	ND	5.00
Calcium (mg/L)	27.50	NA
Magnesium (mg/L)	14.10	NA
Hardness (mg/L)	127.00	NA
Color (SU)	5.00	NA
Turbidity (NTU)	NA	NA

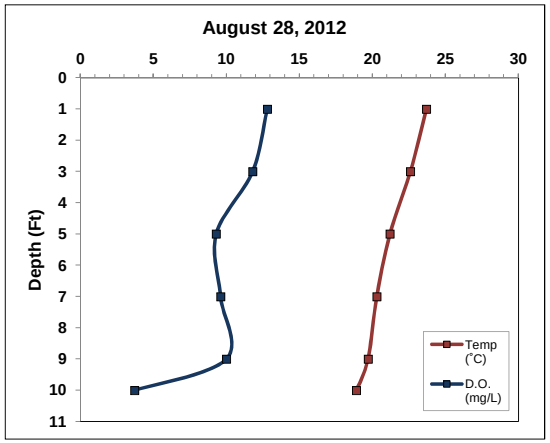
Data collected by BTB (Onterra)

Mirror Lake - North Basin

Date: 8/27/2012
Time: 14:10
Weather: 85F, sunny, no wind
Entry: EEC

Max Depth: 11.6
MLNBS Depth (ft): 3
MLNBB Depth (ft): 9
Secchi Depth (ft): 8.7

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	23.7	12.8	9	
3	22.6	11.8	9	
5	21.2	9.3	8.8	
7	20.3	9.6	8.4	
9	19.7	10	8.3	
10	18.9	3.7	8.3	



Parameter	MLNBS	MLNBB
Total P (µg/L)	39.00	72.00
Dissolved P (µg/L)	NA	NA
Chl-*a* (µg/L)	10.90	NA
TKN (µg/L)	NA	NA
$NO_3 + NO_2$-N (µg/L)	NA	NA
NH_3-N (µg/L)	NA	NA
Total N (µg/L)	NA	NA
Lab Cond. (µS/cm)	NA	NA
Lab pH	NA	NA
Alkalinity (mg/L $CaCO_3$)	NA	NA
Total Susp. Solids (mg/L)	NA	NA
Calcium (mg/L)	NA	NA
Magnesium (mg/L)	NA	NA
Hardness (mg/L)	NA	NA
Color (SU)	NA	NA
Turbidity (NTU)	NA	NA

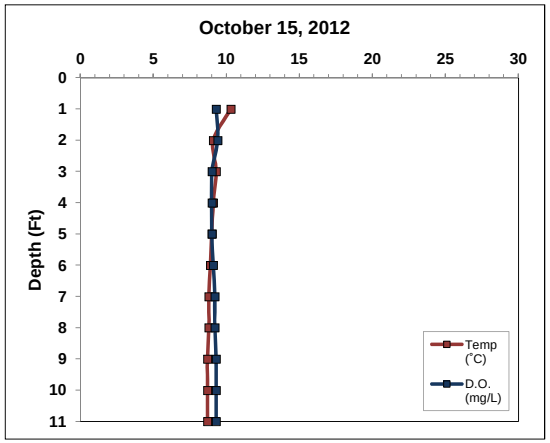
Data collected by DAC and EEC (Onterra)

Mirror Lake - North Basin

Date: 10/15/2012
Time: 12:45
Weather: 45F, 100% sun, light wind
Entry: EEC

Max Depth: 11.8
MLNBS Depth (ft): 3
MLNBB Depth (ft): 10
Secchi Depth (ft): 8.2

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	10.3	9.3	7.7	
2	9.1	9.4	7.7	
3	9.3	9	7.7	
4	9.1	9	7.7	
5	9	9	7.7	
6	8.9	9.1	7.7	
7	8.8	9.2	7.7	
8	8.8	9.2	7.7	
9	8.7	9.3	7.8	
10	8.7	9.3	7.8	
11	8.7	9.3	7.8	



Parameter	MLNBS	MLNBB
Total P (µg/L)	61.00	59.00
Dissolved P (µg/L)	NA	NA
Chl-*a* (µg/L)	2.78	NA
TKN (µg/L)	NA	NA
NO_3 + NO_2-N (µg/L)	NA	NA
NH_3-N (µg/L)	NA	NA
Total N (µg/L)	NA	NA
Lab Cond. (µS/cm)	NA	NA
Lab pH	NA	NA
Alkalinity (mg/L $CaCO_3$)	NA	NA
Total Susp. Solids (mg/L)	ND	ND
Calcium (mg/L)	NA	NA
Magnesium (mg/L)	NA	NA
Hardness (mg/L)	NA	NA
Color (SU)	NA	NA
Turbidity (NTU)	NA	NA

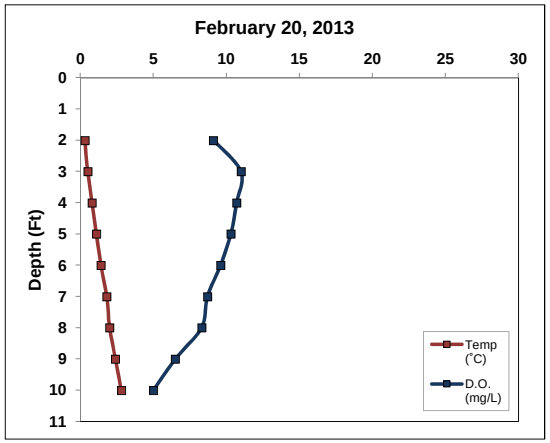
Data collected by BTB and EJG (Onterra)

Mirror Lake - North Basin

Date: 2/20/2013
Time: 11:55
Weather: 0% clouds, light breeze, 12°F
Entry: TWH

Max Depth: 11.2
MLNBS Depth (ft): 3
MLNBB Depth (ft): 9
Secchi Depth (ft): 3.6

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1				
2	0.3	9.1		
3	0.5	11		
4	0.8	10.7		
5	1.1	10.3		
6	1.4	9.6		
7	1.8	8.7		
8	2	8.3		
9	2.4	6.5		
10	2.8	5		



Parameter	MLNBS	MLNBB
Total P (µg/L)	92.00	94.00
Dissolved P (µg/L)	45.00	43.00
Chl-*a* (µg/L)		
TKN (µg/L)	930.00	1040.00
NO_3 + NO_2-N (µg/L)	1790.00	1250.00
NH_3-N (µg/L)	247.00	326.00
Total N (µg/L)	2720.00	2290.00
Lab Cond. (µS/cm)		
Lab pH		
Alkalinity (mg/L $CaCO_3$)		
Total Susp. Solids (mg/L)		
Calcium (mg/L)		
Magnesium (mg/L)		
Hardness (mg/L)		
Color (SU)		
Turbidity (NTU)		

Data collected by TWH and EJG (Onterra) Ice thickness: 1.6'

Water Quality Data

2012	Surface		Bottom	
Parameter	Count	Mean	Count	Mean
Secchi Depth (feet)	6	5.8	NA	NA
Total P (µg/L)	6	68.3	6	87.0
Dissolved P (µg/L)	3	32.7	3	24.0
Chl a (µg/L)	5	47.7	0	NA
TKN (µg/L)	3	930.0	3	780.0
NO3+NO2-N (µg/L)	3	1346.3	3	1007.3
NH3-N (µg/L)	3	135.0	3	176.3
Total N (µg/L)	3	1966.3	3	1787.3
Lab Cond. (µS/cm)	2	252.5	2	240.0
Lab pH	2	8.5	2	7.8
Alkalinity (mg/l CaCO3)	2	108.1	2	100.0
Total Susp Sol (mg/l)	3	13.0	3	7.0
Calcium (µg/L)	2	26.1	0	NA
Magnesium (mg/L)	2	13.1	0	NA
Hardness (mg/L)	2	119.0	0	NA
Color (SU)	2	12.5	0	NA
Turbidity (NTU)	1	5.3	0	NA

Trophic State Index (TSI)

Year	TP	Chl-a	Secchi
1987			55.0
1993	74.6		54.7
1994	74.5	62.5	57.5
2007			54.1
2008			61.1
2009			62.5
2012	63.0	51.0	49.1
All Years (Weighted)	71.7	55.3	56.2
allow, Lowland Drainage Lak	54.6	52.6	52.4
SWTP Ecoregion	48.7	47.0	50.0

	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
1987	15	4.8	11	4.6								
1993	3	4.8	2	4.8					8	104.4	4.0	132.8
1994	7	3.9	5	3.9	1	25.8	1	25.8	2	131.5	2.0	131.5
2007	8	4.5	5	5.0								
2008	9	3.1	6	3.0								
2009	7	3.0	5	2.8								
2012	5	6.3	3	7.0	5	28.1	3	8.0	5	63.6	3.0	59.3
All Years (Weighted)		4.3		4.3		27.7		12.4		94.4		108.0
Shallow, Lowland Drainage Lakes				5.6				9.4				33.0
SWTP Ecoregion				6.6				5.3				22.0

July 2012 N 1610.0
July 2012 P 89.0

Summer 2012 N:P 18 :1

D

APPENDIX D

Watershed Analysis WiLMS Results

Date: 4/29/2013 Scenario: Mirror Lake Entire Watershed Current (Data from North Basin)

Lake Id: Mirror_Watershed_Current
Watershed Id: 0

Hydrologic and Morphometric Data

Tributary Drainage Area: 42586.0 acre
Total Unit Runoff: 8 in.
Annual Runoff Volume: 28390.7 acre-ft
Lake Surface Area <As>: 141 acre
Lake Volume <V>: 709 acre-ft
Lake Mean Depth <z>: 5.0 ft
Precipitation - Evaporation: 1.6 in.
Hydraulic Loading: 28409.5 acre-ft/year
Areal Water Load <qs>: 201.5 ft/year
Lake Flushing Rate <p>: 40.07 1/year
Water Residence Time: 0.02 year
Observed spring overturn total phosphorus (SPO): 90.0 mg/m^3
Observed growing season mean phosphorus (GSM): 94.4 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	15347	0.50	1.00	3.00	78.8	3105	6211	18633
Mixed AG	0.0	0.30	0.80	1.40	0.0	0	0	0
Pasture/Grass	7243	0.10	0.30	0.50	11.2	293	879	1466
HD Urban (1/8 Ac)	56	1.00	1.50	2.00	0.4	23	34	45
MD Urban (1/4 Ac)	53	0.30	0.50	0.80	0.1	6	11	17
Rural Res (>1 Ac)	423	0.05	0.10	0.25	0.2	9	17	43
Wetlands	1128	0.10	0.10	0.10	0.6	46	46	46
Forest	18336	0.05	0.09	0.18	8.5	371	668	1336
Lake Surface	141.0	0.10	0.30	1.00	0.2	6	17	57

POINT SOURCE DATA

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

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)	8506.7	17378.3	47712.2	100.0
Total Loading (kg)	3858.6	7882.8	21642.1	100.0
Areal Loading (lb/ac-year)	60.33	123.25	338.38	0.0
Areal Loading (mg/m^2-year)	6762.33	13814.70	37928.25	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)	8494.2	17340.6	47586.4	100.0
Total NPS Loading (kg)	3852.9	7865.6	21585.1	100.0

Phosphorus Prediction and Uncertainty Analysis Module

Date: 4/29/2013 Scenario: 76
Observed spring overturn total phosphorus (SPO): 90.0 mg/m^3
Observed growing season mean phosphorus (GSM): 94.4 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	73	148	407	54	57
Canfield-Bachmann, 1981 Natural Lake	93	178	436	84	89
Canfield-Bachmann, 1981 Artificial Lake	79	140	294	46	49
Rechow, 1979 General	79	162	445	68	72
Rechow, 1977 Anoxic	97	198	545	104	110
Rechow, 1977 water load<50m/year	N/A	N/A	N/A	N/A	N/A
Rechow, 1977 water load>50m/year	92	189	518	95	101
Walker, 1977 General	95	195	535	105	117
Vollenweider, 1982 Combined OECD	65	117	267	25	27
Dillon-Rigler-Kirchner	75	153	420	63	70
Vollenweider, 1982 Shallow Lake/Res.	56	105	256	13	14
Larsen-Mercier, 1976	95	194	533	104	116
Nurnberg, 1984 Oxic	89	182	501	88	93

Lake Phosphorus Model	Confidence Lower Bound	Confidence Upper Bound	Parameter Fit?	Back Calculation (kg/year)	Model Type
Walker, 1987 Reservoir	86	314	Tw	0	GSM
Canfield-Bachmann, 1981 Natural Lake	55	513	L	1	GSM
Canfield-Bachmann, 1981 Artificial Lake	43	403	FIT	1	GSM
Rechow, 1979 General	91	347	P	0	GSM
Rechow, 1977 Anoxic	118	419	FIT	0	GSM
Rechow, 1977 water load<50m/year	N/A	N/A	N/A	N/A	N/A
Rechow, 1977 water load>50m/year	130	389	P Pin	0	GSM
Walker, 1977 General	97	431	FIT	0	SPO
Vollenweider, 1982 Combined OECD	57	238	FIT	0	ANN
Dillon-Rigler-Kirchner	90	324	P L	0	SPO
Vollenweider, 1982 Shallow Lake/Res.	52	219	FIT	0	ANN
Larsen-Mercier, 1976	118	408	P Pin p	0	SPO
Nurnberg, 1984 Oxic	95	398	P L	0	ANN

E

APPENDIX E

Aquatic Plant Survey Data

Point Number	LATITUDE	LONGITUDE	LAKE_NAME	COUNTY	DATE	FIELD_CREW	PNT_NUM	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	EWM	CLP	AQ_MOSS	CALLP	CERDE	CHARA	ELOCA	ELONU	F_AGLAE	FW_SPONGE	HETDU	LEMTU	NAJFL	POTAM	POTEP	POTFR	POTNO	POTST	POTZO	RANAQ	SAGLA	SPIPO	STUPE	WOLFIA	ZIZAQ
1	43.561996	-89.838735	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	1	0			NONNAVIGABLE (PLANTS)																												
2	43.561663	-89.838736	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	2	0			NONNAVIGABLE (PLANTS)																												
3	43.561330	-89.838737	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	3	0			NONNAVIGABLE (PLANTS)																												
4	43.560997	-89.838737	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	4	0			TERRESTRIAL																												
5	43.562329	-89.838276	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	5	0			NONNAVIGABLE (PLANTS)																												
6	43.561996	-89.838277	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	6	0			NONNAVIGABLE (PLANTS)																												
7	43.561663	-89.838278	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	7	0			NONNAVIGABLE (PLANTS)																												
8	43.561329	-89.838278	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	8	0			NONNAVIGABLE (PLANTS)																												
9	43.560996	-89.838279	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	9	3	Muck	Pole			YES	3							3	1				1												
10	43.560663	-89.838280	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	10	2	Muck	Pole			YES	3					1		3	1				1												
11	43.562995	-89.837816	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	11	0			NONNAVIGABLE (PLANTS)																												
12	43.562661	-89.837817	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	12	0			TERRESTRIAL																												
13	43.562328	-89.837818	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	13	0			NONNAVIGABLE (PLANTS)																												
14	43.561995	-89.837818	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	14	0			NONNAVIGABLE (PLANTS)																												
15	43.561662	-89.837819	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	15	0			NONNAVIGABLE (PLANTS)																												
16	43.561329	-89.837820	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	16	0			TERRESTRIAL																												
17	43.560996	-89.837821	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	17	0			TERRESTRIAL																												
18	43.560662	-89.837822	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	18	0			NONNAVIGABLE (PLANTS)																												
19	43.560329	-89.837823	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	19	0			NONNAVIGABLE (PLANTS)																												
20	43.559996	-89.837824	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	20	0			NONNAVIGABLE (PLANTS)																												
21	43.563993	-89.837355	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	21	0			NONNAVIGABLE (PLANTS)																												
22	43.563660	-89.837356	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	22	1	Muck	Pole			YES	3					3		1					1											1	
23	43.563327	-89.837357	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	23	1	Muck	Pole			YES	3					1		1		3			1											1	
24	43.562994	-89.837358	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	24	0			NONNAVIGABLE (PLANTS)																												
25	43.562661	-89.837359	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	25	0			NONNAVIGABLE (PLANTS)																												
26	43.562328	-89.837359	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	26	0			NONNAVIGABLE (PLANTS)																												
27	43.561994	-89.837360	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	27	0			NONNAVIGABLE (PLANTS)																												
28	43.561661	-89.837361	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	28	0			NONNAVIGABLE (PLANTS)																												
29	43.561328	-89.837362	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	29	2	Muck	Pole			YES	3		2					3					1												
30	43.560995	-89.837363	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	30	0			NONNAVIGABLE (PLANTS)		YES																										
31	43.560662	-89.837364	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	31	0			NONNAVIGABLE (PLANTS)																												
32	43.560329	-89.837365	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	32	0			NONNAVIGABLE (PLANTS)																												
33	43.559996	-89.837366	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	33	0			NONNAVIGABLE (PLANTS)																												
34	43.559662	-89.837367	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	34	0			NONNAVIGABLE (PLANTS)																												
35	43.564326	-89.836896	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	35	0			NONNAVIGABLE (PLANTS)																												
36	43.563993	-89.836897	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	36	1	Muck	Pole			YES	3	1				2		2					1		1					1				1	
37	43.563660	-89.836898	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	37	2	Muck				YES	3					3		1	1				1											1	
38	43.563326	-89.836899	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	38	1	Muck	Pole			YES	3					1		3					1											1	
39	43.562993	-89.836900	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	39	0			NONNAVIGABLE (PLANTS)																												

Point Number	LATITUDE	LONGITUDE	LAKE_NAME	COUNTY	DATE	FIELD_CREW	PNT_NUM	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	EWM	CLP	AQ_MOSS	CALLP	CERDE	CHARA	ELOCA	ELONU	F_AGLAE	FW_SPONGE	HETDU	LEMTU	NAJFL	POTAM	POTEP	POTFR	POTNO	POTST	POTZO	RANAQ	SAGLA	SPIPO	STUPE	WOLFIA	ZIZAQ
40	43.562660	-89.836900	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	40	0			NONNAVIGABLE (PLANTS)																												
41	43.562327	-89.836901	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	41	0			NONNAVIGABLE (PLANTS)																												
42	43.561994	-89.836902	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	42	0			NONNAVIGABLE (PLANTS)																												
43	43.561661	-89.836903	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	43	1	Muck	Pole			YES	3		1					2					1			1							2		
44	43.561327	-89.836904	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	44	3	Muck	Pole				2							2																	
45	43.560994	-89.836905	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	45	0			NONNAVIGABLE (PLANTS)																												
46	43.560661	-89.836906	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	46	0			NONNAVIGABLE (PLANTS)																												
47	43.560328	-89.836907	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	47	0			NONNAVIGABLE (PLANTS)																												
48	43.559995	-89.836908	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	48	0			NONNAVIGABLE (PLANTS)																												
49	43.559662	-89.836909	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	49	0			NONNAVIGABLE (PLANTS)																												
50	43.559329	-89.836909	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	50	0			NONNAVIGABLE (PLANTS)																												
51	43.558995	-89.836910	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	51	0			NONNAVIGABLE (PLANTS)																												
52	43.564658	-89.836437	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	52	0			NONNAVIGABLE (PLANTS)																												
53	43.564325	-89.836438	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	53	2	Muck	Pole			YES	3		1			1		3	1				1								1				1	
54	43.563992	-89.836439	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	54	2	Muck	Pole			YES	3	1				2		1					1		1		1							1	
55	43.563659	-89.836440	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	55	2	Muck	Pole			YES	3					1		3																
56	43.563326	-89.836440	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	56	0			NONNAVIGABLE (PLANTS)																												
57	43.562993	-89.836441	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	57	0			NONNAVIGABLE (PLANTS)																												
58	43.562659	-89.836442	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	58	0			NONNAVIGABLE (PLANTS)																												
59	43.562326	-89.836443	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	59	0	Muck	Pole			YES	3					1		1	1								2						1		1
60	43.561993	-89.836444	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	60	3	Muck	Pole			YES	3							3	1				1											
61	43.561660	-89.836445	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	61	4	Muck	Pole			YES	3					1		3					1				1							
62	43.561327	-89.836446	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	62	0			NONNAVIGABLE (PLANTS)																												
63	43.560994	-89.836447	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	63	0			NONNAVIGABLE (PLANTS)																												
64	43.560661	-89.836448	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	64	0			NONNAVIGABLE (PLANTS)																												
65	43.560327	-89.836449	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	65	0			NONNAVIGABLE (PLANTS)																												
66	43.559994	-89.836449	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	66	0			NONNAVIGABLE (PLANTS)																												
67	43.559661	-89.836450	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	67	0			NONNAVIGABLE (PLANTS)																												
68	43.564991	-89.835978	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	68	0			NONNAVIGABLE (PLANTS)																												
69	43.564658	-89.835979	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	69	0			NONNAVIGABLE (PLANTS)																												
70	43.564325	-89.835980	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	70	2	Muck	Pole			YES	2							1													1	2				
71	43.563991	-89.835981	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	71	2	Muck	Pole			YES	3	1				1			1	3			1		1										
72	43.563658	-89.835981	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	72	0			NONNAVIGABLE (PLANTS)																												
73	43.563325	-89.835982	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	73	0			NONNAVIGABLE (PLANTS)																												
74	43.562992	-89.835983	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	74	1	Muck				YES	3		1			1		3					1												1
75	43.562659	-89.835984	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	75	4	Muck				YES	3							3					1												
76	43.562326	-89.835985	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	76	4	Muck	Pole			NO	1							1																	
77	43.561992	-89.835986	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	77	1	Muck	Pole			YES	3							3					1				1								1
78	43.561659	-89.835987	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	78	0			NONNAVIGABLE (PLANTS)																												

Point Number	LATITUDE	LONGITUDE	LAKE_NAME	COUNTY	DATE	FIELD_CREW	PNT_NUM	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	EWM	CLP	AQ_MOSS	CALLP	CERDE	CHARA	ELOCA	ELONU	F_AGLAE	FW_SPONGE	HETDU	LEMTU	NAJFL	POTAM	POTEP	POTFR	POTNO	POTST	POTZO	RANAQ	SAGLA	SPIPO	STUPE	WOLFIA	ZIZAQ
79	43.561326	-89.835988			6/25/2012	BTB & DAC & EJG	79	0			NONNAVIGABLE (PLANTS)																												
80	43.560993	-89.835989	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	80	0			NONNAVIGABLE (PLANTS)																												
81	43.560660	-89.835990	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	81	0			NONNAVIGABLE (PLANTS)																												
82	43.560327	-89.835990	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	82	0			NONNAVIGABLE (PLANTS)																												
83	43.559994	-89.835991	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	83	0			NONNAVIGABLE (PLANTS)																												
84	43.565657	-89.835518	Mirror Lake	Sauk	6/25/2012	EJH & TWH	84	0			NONNAVIGABLE (PLANTS)																												
85	43.565323	-89.835519	Mirror Lake	Sauk	6/25/2012	EJH & TWH	85	0			NONNAVIGABLE (PLANTS)																												
86	43.564990	-89.835520	Mirror Lake	Sauk	6/25/2012	EJH & TWH	86	0			NONNAVIGABLE (PLANTS)																												
87	43.564657	-89.835521	Mirror Lake	Sauk	6/25/2012	EJH & TWH	87	1	Muck	Pole			YES	3					1		3		1				1							1				1	
88	43.564324	-89.835521	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	88	2	Muck	Pole			YES	3					1		1		3				1		1					1				1	
89	43.563991	-89.835522	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	89	2	Muck				YES	3	1				1				3				1						1	1					
90	43.563658	-89.835523	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	90	1	Muck				NO	3		1			1		1		3				1					1				1		
91	43.563324	-89.835524	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	91	4	Muck	Pole			YES	3		1					1		3				1											
92	43.562991	-89.835525	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	92	5	Muck	Pole			YES	3		1					2		1				1											
93	43.562658	-89.835526	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	93	1	Muck	Pole			YES	3					1	1	1		1				1				1	1						
94	43.562325	-89.835527	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	94	0			NONNAVIGABLE (PLANTS)																												
95	43.561992	-89.835528	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	95	0			NONNAVIGABLE (PLANTS)																												
96	43.561326	-89.835530			6/25/2012	BTB & DAC & EJG	96	0			NONNAVIGABLE (PLANTS)																												
97	43.564990	-89.835061	Mirror Lake	Sauk	6/25/2012	EJH & TWH	97	0			NONNAVIGABLE (PLANTS)																												
98	43.564656	-89.835062	Mirror Lake	Sauk	6/25/2012	EJH & TWH	98	2	Muck	Pole			YES	1					1		1		1				1											1	
99	43.564323	-89.835063	Mirror Lake	Sauk	6/25/2012	EJH & TWH	99	3	Muck	Pole			YES	1									1				1		1									1	
100	43.563990	-89.835064	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	100	2	Muck	Pole			YES	3		1			1		3						1		1									1	
101	43.563657	-89.835065	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	101	4	Muck	Pole			YES	3		1			1		3		1				1											
102	43.563324	-89.835066	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	102	4	Muck	Pole				1							1		1															
103	43.562991	-89.835067	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	103	1	Muck	Pole			YES	2					1		1		2				1											1	
104	43.564656	-89.834604	Mirror Lake	Sauk	6/25/2012	EJH & TWH	104	2	Muck	Pole			YES	1					1		1		1				1											1	
105	43.564323	-89.834605	Mirror Lake	Sauk	6/25/2012	EJH & TWH	105	5	Muck	Pole				2					2		1												1					
106	43.563989	-89.834606	Mirror Lake	Sauk	6/25/2012	EJH & TWH	106	8	Muck	Pole				2					1		2		1															
107	43.563656	-89.834607	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	107	8	Muck	Pole			YES	3					3		1		1				1						1					
108	43.563323	-89.834608	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	108	5	Muck	Pole				3					1		2	1						1										
109	43.564655	-89.834146	Mirror Lake	Sauk	6/25/2012	EJH & TWH	109	2	Muck	Pole			YES	1					1				1				1											1	
110	43.564322	-89.834147	Mirror Lake	Sauk	6/25/2012	EJH & TWH	110	4	Muck	Pole				1		1			1		1		1				1											1	
111	43.563989	-89.834148	Mirror Lake	Sauk	6/25/2012	EJH & TWH	111	10	Muck	Pole				2					2		1		1															
112	43.563656	-89.834149	Mirror Lake	Sauk	6/25/2012	EJH & TWH	112	10	Muck	Pole				1					1		1		1															
113	43.563322	-89.834150	Mirror Lake	Sauk	6/25/2012	EJH & TWH	113	6	Muck	Pole				2					1		2																	
114	43.564654	-89.833688	Mirror Lake	Sauk	6/25/2012	EJH & TWH	114	1	Muck	Pole			YES	3					2		2		1				1											1	
115	43.564321	-89.833689	Mirror Lake	Sauk	6/25/2012	EJH & TWH	115	5	Muck	Pole				2					2				1				1		1				1					1	
116	43.563988	-89.833690	Mirror Lake	Sauk	6/25/2012	EJH & TWH	116	8	Muck	Pole				1							1		1															
117	43.563655	-89.833691	Mirror Lake	Sauk	6/25/2012	EJH & TWH	117	9	Muck	Pole				1					1		1																	

Point Number	LATITUDE	LONGITUDE	LAKE_NAME	COUNTY	DATE	FIELD_CREW	PNT_NUM	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	EWM	CLP	AQ_MOSS	CALLP	CERDE	CHARA	ELOCA	ELONU	F_AGLAE	FW_SPONGE	HETDU	LEMTU	NAJFL	POTAM	POTEP	POTFR	POTNO	POTST	POTZO	RANAQ	SAGLA	SPIPO	STUPE	WOLFIA	ZIZAQ
118	43.563322	-89.833692	Mirror Lake	Sauk	6/25/2012	EJH & TWH	118	5	Muck	Pole				1					1		1											1						
119	43.564654	-89.833230	Mirror Lake	Sauk	6/25/2012	EJH & TWH	119	1	Muck	Pole			YES	1							1		1			1											1	
120	43.564321	-89.833231	Mirror Lake	Sauk	6/25/2012	EJH & TWH	120	3	Muck	Pole			YES	2	1				1		1		1			1											1	
121	43.563987	-89.833232	Mirror Lake	Sauk	6/25/2012	EJH & TWH	121	3	Sand	Pole				2	1	1			1		1		1			1											1	
122	43.563654	-89.833233	Mirror Lake	Sauk	6/25/2012	EJH & TWH	122	5	Muck	Pole			YES	3		1			1		3		1			1											1	
123	43.563321	-89.833233	Mirror Lake	Sauk	6/25/2012	EJH & TWH	123	4	Muck	Pole			YES	3		1			1		3		1			1											1	
124	43.564653	-89.832772	Mirror Lake	Sauk	6/25/2012	EJH & TWH	124	1	Muck	Pole			YES	3		1			3		1		1			1											1	
125	43.564320	-89.832773	Mirror Lake	Sauk	6/25/2012	EJH & TWH	125	3	Muck	Pole			YES	3					1		3		1			1		1									1	
126	43.563987	-89.832773	Mirror Lake	Sauk	6/25/2012	EJH & TWH	126	5	Muck	Pole			YES	1							1		1			1											1	
127	43.563654	-89.832774	Mirror Lake	Sauk	6/25/2012	EJH & TWH	127	4	Muck	Pole			YES	3		1					2		1			1											1	
128	43.563320	-89.832775	Mirror Lake	Sauk	6/25/2012	EJH & TWH	128	3	Muck	Pole			YES	1							1		1		1	1		1									1	
129	43.564652	-89.832313	Mirror Lake	Sauk	6/25/2012	EJH & TWH	129	1	Muck	Pole			YES	2					1		1		1		1	1											1	
130	43.564319	-89.832314	Mirror Lake	Sauk	6/25/2012	EJH & TWH	130	4	Muck	Pole			YES	3	1	1			1		2		1			1							1				1	
131	43.563986	-89.832315	Mirror Lake	Sauk	6/25/2012	EJH & TWH	131	5	Muck	Pole				3	1	2					1		1			1											1	
132	43.563653	-89.832316	Mirror Lake	Sauk	6/25/2012	EJH & TWH	132	3	Muck	Pole			YES	2		1					2		1			1		1									1	
133	43.563320	-89.832317	Mirror Lake	Sauk	6/25/2012	EJH & TWH	133	4	Muck	Pole			YES	2		1			1				1			1		1									1	
134	43.564652	-89.831855	Mirror Lake	Sauk	6/25/2012	EJH & TWH	134	2	Muck	Pole			YES	1					1		1			1		1											1	
135	43.564319	-89.831856	Mirror Lake	Sauk	6/25/2012	EJH & TWH	135	3	Muck	Pole			YES	3	1	1			2		2		1			1								1			1	
136	43.563985	-89.831857	Mirror Lake	Sauk	6/25/2012	EJH & TWH	136	5	Muck	Pole				2	1						1		1			1		1									1	
137	43.563652	-89.831858	Mirror Lake	Sauk	6/25/2012	EJH & TWH	137	4	Muck	Pole				1	V						1		1		1	1											1	
138	43.563319	-89.831859	Mirror Lake	Sauk	6/25/2012	EJH & TWH	138	3	Muck	Pole			YES	2	1				1		2		1			1											1	
139	43.564651	-89.831397	Mirror Lake	Sauk	6/25/2012	EJH & TWH	139	1	Muck	Pole			YES	1					1		1		1			1											1	
140	43.564318	-89.831398	Mirror Lake	Sauk	6/25/2012	EJH & TWH	140	3	Muck	Pole			YES	3	1	1					3		1		1	1											1	
141	43.563985	-89.831399	Mirror Lake	Sauk	6/25/2012	EJH & TWH	141	5	Muck	Pole				2		1			1		2		1			1											1	
142	43.563652	-89.831400	Mirror Lake	Sauk	6/25/2012	EJH & TWH	142	5	Muck	Pole				2					1		1		1			1		1									1	
143	43.563318	-89.831401	Mirror Lake	Sauk	6/25/2012	EJH & TWH	143	3	Muck	Pole			YES	3	1	1					2		1		1	1		1									1	
144	43.564650	-89.830939	Mirror Lake	Sauk	6/25/2012	EJH & TWH	144	1	Muck	Pole			YES	2		1			1		1		1			1											1	
145	43.564317	-89.830940	Mirror Lake	Sauk	6/25/2012	EJH & TWH	145	5	Muck	Pole				1	V	V			1		1		1			1		1									1	
146	43.563984	-89.830941	Mirror Lake	Sauk	6/25/2012	EJH & TWH	146	6	Muck	Pole				2	1						2		1			1											1	
147	43.563651	-89.830942	Mirror Lake	Sauk	6/25/2012	EJH & TWH	147	4	Muck	Pole			YES	2		1					2		1			1											1	
148	43.563318	-89.830943	Mirror Lake	Sauk	6/25/2012	EJH & TWH	148	4	Muck	Pole			YES	1					1		1		1			1											1	
149	43.564317	-89.830482	Mirror Lake	Sauk	6/25/2012	EJH & TWH	149	3	Sand	Pole				2		1					1		1			1								1			1	
150	43.563983	-89.830483	Mirror Lake	Sauk	6/25/2012	EJH & TWH	150	5	Muck	Pole				1		1			1		1		1			1		1									1	
151	43.563650	-89.830484	Mirror Lake	Sauk	6/25/2012	EJH & TWH	151	5	Muck	Pole				1					1		1		1			1		1									1	
152	43.563317	-89.830485	Mirror Lake	Sauk	6/25/2012	EJH & TWH	152	4	Muck	Pole			YES	2	1	1					2		1			1	1											1	
153	43.562984	-89.830486	Mirror Lake	Sauk	6/25/2012	EJH & TWH	153	3	Muck	Pole			YES	1					1		1		1			1	1											1	
154	43.564316	-89.830024	Mirror Lake	Sauk	6/25/2012	EJH & TWH	154	1	Muck	Pole			YES	3					1		3					3											3	
155	43.563983	-89.830025	Mirror Lake	Sauk	6/25/2012	EJH & TWH	155	3	Muck	Pole			YES	3					1		3		1			1											1	
156	43.563650	-89.830025	Mirror Lake	Sauk	6/25/2012	EJH & TWH	156	5	Muck	Pole				2	1						2																	

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157	43.563316	-89.830026	Mirror Lake	Sauk	6/25/2012	EJH & TWH	157	4	Muck	Pole				1	1	1							1		1	1												1	
158	43.562983	-89.830027	Mirror Lake	Sauk	6/25/2012	EJH & TWH	158	1	Muck	Pole			YES	3					2		2		1			2												1	
159	43.563982	-89.829566	Mirror Lake	Sauk	6/25/2012	EJH & TWH	159	2	Muck	Pole			YES	3	1	1			1		3		1			1												1	
160	43.563649	-89.829567	Mirror Lake	Sauk	6/25/2012	EJH & TWH	160	6	Muck	Pole				1							1		1					1										
161	43.563316	-89.829568	Mirror Lake	Sauk	6/25/2012	EJH & TWH	161	4	Muck	Pole				1							1		1			1													
162	43.563648	-89.829109	Mirror Lake	Sauk	6/25/2012	EJH & TWH	162	6	Muck	Pole				2					1		1		1					1										
163	43.563315	-89.829110	Mirror Lake	Sauk	6/25/2012	EJH & TWH	163	5	Muck	Pole				2	1				1		1		1			1		1										
164	43.563647	-89.828651	Mirror Lake	Sauk	6/25/2012	EJH & TWH	164	5	Muck	Pole				1							1		1		1	1		1										
165	43.563314	-89.828652	Mirror Lake	Sauk	6/25/2012	EJH & TWH	165	7	Muck	Pole				1					1		1		1															
166	43.563647	-89.828193	Mirror Lake	Sauk	6/25/2012	EJH & TWH	166	2	Muck	Pole			YES	2		1			1		1	1	1			1					1			1			1	
167	43.563314	-89.828194	Mirror Lake	Sauk	6/25/2012	EJH & TWH	167	6	Muck	Pole				1									1		1								1					
168	43.563313	-89.827736	Mirror Lake	Sauk	6/25/2012	EJH & TWH	168	7	Muck	Pole				1		1			1				1		1	1												
169	43.563312	-89.827278	Mirror Lake	Sauk	6/25/2012	EJH & TWH	169	6	Muck	Pole				1		1							1			1		1										
170	43.563312	-89.826819	Mirror Lake	Sauk	6/25/2012	EJH & TWH	170	5	Muck	Pole				1	1						1		1					1										
171	43.563311	-89.826361	Mirror Lake	Sauk	6/25/2012	EJH & TWH	171	6	Muck	Pole				1							1		1		1													
172	43.563643	-89.825902	Mirror Lake	Sauk	6/25/2012	EJH & TWH	172	4	Muck	Pole				1							1		1		1	1							1					1	
173	43.563643	-89.825444	Mirror Lake	Sauk	6/25/2012	EJH & TWH	173	8	Muck	Pole				0																								
174	43.563975	-89.824985	Mirror Lake	Sauk	6/25/2012	EJH & TWH	174	3	Sand	Pole				1							1		1		1	1												1	
175	43.563974	-89.824527	Mirror Lake	Sauk	6/25/2012	EJH & TWH	175	9	Muck	Pole				1					1																			
176	43.564307	-89.824068	Mirror Lake	Sauk	6/25/2012	EJH & TWH	176	3	Sand	Pole				1									1		1													
177	43.564306	-89.823609	Mirror Lake	Sauk	6/25/2012	EJH & TWH	177	4	Sand	Pole				1					1		1		1															
178	43.564639	-89.823150	Mirror Lake	Sauk	6/25/2012	EJH & TWH	178	1	Rock	Pole				0																								
179	43.564638	-89.822692	Mirror Lake	Sauk	6/25/2012	EJH & TWH	179	7	Sand	Pole				0																								
180	43.564970	-89.822233	Mirror Lake	Sauk	6/25/2012	EJH & TWH	180	5	Sand	Pole				0																								
181	43.565303	-89.821774	Mirror Lake	Sauk	6/25/2012	EJH & TWH	181	9	Sand	Pole				0									1															
182	43.565968	-89.821314	Mirror Lake	Sauk	6/25/2012	EJH & TWH	182	1	Sand	Pole				1					1				1		1	1												1	
183	43.565635	-89.821315	Mirror Lake	Sauk	6/25/2012	EJH & TWH	183	10	Sand	Pole				0																								
184	43.566301	-89.820855	Mirror Lake	Sauk	6/25/2012	EJH & TWH	184	7	Sand	Pole				0																								
185	43.565968	-89.820856	Mirror Lake	Sauk	6/25/2012	EJH & TWH	185	9	Sand	Pole				0																								
186	43.567966	-89.820391	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	186	3	Sand	Pole				0									1															
187	43.567633	-89.820392	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	187	6	Sand	Pole				0																								
188	43.567300	-89.820393	Mirror Lake	Sauk	6/25/2012	EJH & TWH	188	10	Sand	Pole				0																								
189	43.566966	-89.820394	Mirror Lake	Sauk	6/25/2012	EJH & TWH	189	8	Sand	Pole				1					1																			
190	43.566633	-89.820395	Mirror Lake	Sauk	6/25/2012	EJH & TWH	190	9	Sand	Pole				0																								
191	43.568631	-89.819931	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	191	2	Rock	Pole																												
192	43.568298	-89.819932	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	192	6	Sand	Pole				1					1						1													
193	43.567965	-89.819933	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	193	2	Sand	Pole				1											1													
194	43.568964	-89.819472	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	194	0			TERRESTRIAL																											
195	43.568631	-89.819473	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	195	2	Sand	Pole				1									1		1													

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196	43.568963	-89.819014	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	196	5	Sand	Pole				2											2								1						
197	43.569296	-89.818555	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	197	4	Sand	Pole				0																									
198	43.568962	-89.818556	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	198	1	Sand	Pole				3									1		3								1						
199	43.569295	-89.818097	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	199	5	Muck	Pole				2											1				2				1						
200	43.569627	-89.817637	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	200	2	Sand	Pole				0																									
201	43.569294	-89.817638	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	201	0			TEMPORARY OBSTACLE																													
202	43.569627	-89.817179	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	202	10	Muck	Pole				1					1																				
203	43.569626	-89.816721	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	203	8	Rock	Pole				0																									
204	43.569958	-89.816262	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	204	3	Muck	Pole				2		1					1												1	1					
205	43.570291	-89.815803	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	205	2	Muck	Pole				1			1		1																				
206	43.569957	-89.815804	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	206	11	Muck	Pole				0																									
207	43.570290	-89.815344	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	207	3	Muck	Pole				3					1						3														
208	43.570622	-89.814885	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	208	4	Muck	Pole				2					1						2														
209	43.570289	-89.814886	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	209	7	Muck	Pole				2					1						1														
210	43.570955	-89.814426	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	210	0			DOCK																												
211	43.570622	-89.814427	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	211	10	Sand	Pole				0																									
212	43.570288	-89.814428	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	212	9	Muck	Pole				1					1						1														
213	43.570954	-89.813968	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	213	3	Sand	Pole				1					1						1														
214	43.570621	-89.813969	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	214	9	Sand	Pole				0																									
215	43.570288	-89.813970	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	215	6	Muck	Pole				1					1		1																		
216	43.574951	-89.813497	Mirror Lake	Sauk	6/25/2012	EJH & TWH	216	2	Sand	Pole					1										1		1				1								
217	43.570953	-89.813510	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	217	6	Muck	Pole				1					1																			
218	43.570620	-89.813511	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	218	9	Sand	Pole				1					1																			
219	43.570287	-89.813512	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	219	5	Muck	Pole				1	1						1				1													
220	43.569954	-89.813513	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	220	4	Muck	Pole				2							1				1			1		1								
221	43.571286	-89.813050	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	221	1	Rock	Pole				0																									
222	43.570952	-89.813051	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	222	8	Muck	Pole				1					1		1																		
223	43.570619	-89.813052	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	223	7	Muck	Pole				3	2				2		1							1										
224	43.570286	-89.813053	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	224	4	Muck	Pole				2	1				1		1							1										
225	43.569953	-89.813054	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	225	6	Muck	Pole				1	1													1										
226	43.569620	-89.813055	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	226	7	Muck	Pole				1					1														1					
227	43.569287	-89.813056	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	227	6	Muck	Pole				1							1																	
228	43.568954	-89.813057	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	228	5	Muck	Pole				3					1		1				3													
229	43.575283	-89.812580	Mirror Lake	Sauk	6/25/2012	EJH & TWH	229	0			TERRESTRIAL																												
230	43.571618	-89.812591	Mirror Lake	Sauk	6/25/2012	EJH & TWH	230	3	Sand	Pole				1					1				1															
231	43.571285	-89.812592	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	231	8	Muck	Pole				1					1																			
232	43.570952	-89.812593	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	232	7	Muck	Pole				1					1		1																	
233	43.570619	-89.812594	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	233	7	Muck	Pole				2	1				2		2	1																
234	43.570285	-89.812595	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	234	4	Muck					2	1						1				1			1										

Point Number	LATITUDE	LONGITUDE	LAKE_NAME	COUNTY	DATE	FIELD_CREW	PNT_NUM	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	EWM	CLP	AQ_MOSS	CALLP	CERDE	CHARA	ELOCA	ELONU	F_AGLAE	FW_SPONGE	HETDU	LEMTU	NAJFL	POTAM	POTEP	POTFR	POTNO	POTST	POTZO	RANAQ	SAGLA	SPIPO	STUPE	WOLFIA	ZIZAQ
235	43.569952	-89.812596	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	235	9	Muck	Pole				2					1		2																	
236	43.569619	-89.812597	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	236	9	Muck	Pole				2					1		1											1					
237	43.569286	-89.812598	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	237	8	Muck	Pole				2							1											1					
238	43.568953	-89.812599	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	238	7	Muck	Pole				3	1				1		2																
239	43.568620	-89.812600	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	239	7	Muck	Pole				2	1				1		1																
240	43.568286	-89.812601	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	240	6	Muck	Pole									1		1				1												
241	43.567953	-89.812602	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	241	3	Muck	Pole				2					1		1				1							1					
242	43.576281	-89.812118	Mirror Lake	Sauk	6/25/2012	EJH & TWH	242	0	Muck	Pole				1				1							1	1								1			1	
243	43.575282	-89.812121	Mirror Lake	Sauk	6/25/2012	EJH & TWH	243	7	Sand	Pole				1					1						1												
244	43.573949	-89.812126	Mirror Lake	Sauk	6/25/2012	EJH & TWH	244	0			TERRESTRIAL																											
245	43.573616	-89.812127	Mirror Lake	Sauk	6/25/2012	EJH & TWH	245	11	Sand	Pole				0																							
246	43.573283	-89.812128	Mirror Lake	Sauk	6/25/2012	EJH & TWH	246	11	Muck	Pole				0																							
247	43.572950	-89.812129	Mirror Lake	Sauk	6/25/2012	EJH & TWH	247	10	Sand	Pole				0																							
248	43.572617	-89.812130	Mirror Lake	Sauk	6/25/2012	EJH & TWH	248	10	Muck	Pole				0																							
249	43.572284	-89.812131	Mirror Lake	Sauk	6/25/2012	EJH & TWH	249	9	Muck	Pole				1					1						1								1				
250	43.571950	-89.812132	Mirror Lake	Sauk	6/25/2012	EJH & TWH	250	9	Muck	Pole				2					2		1																
251	43.571617	-89.812133	Mirror Lake	Sauk	6/25/2012	EJH & TWH	251	7	Muck	Pole				1														1									
252	43.571284	-89.812134	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	252	10	Muck	Pole				1					1		1								1								
253	43.570951	-89.812135	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	253	10	Muck	Pole				2					1		2				11												
254	43.570618	-89.812136	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	254	10	Muck	Pole				2					2		1																
255	43.570285	-89.812137	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	255	10	Muck	Pole				1							1																
256	43.569952	-89.812138	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	256	9	Muck	Pole				1							1																
257	43.569618	-89.812139	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	257	10	Muck	Pole				1					1		1																
258	43.569285	-89.812140	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	258	10	Muck	Pole				1							1																
259	43.568952	-89.812141	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	259	9	Muck	Pole				2					2		1																
260	43.568619	-89.812142	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	260	9	Muck	Pole				1					1		1																
261	43.568286	-89.812143	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	261	9	Muck	Pole				1					1		1												1				
262	43.567953	-89.812144	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	262	14	Muck	Pole				1							1																
263	43.567619	-89.812145	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	263	8	Muck	Pole				2	1				1		1									1							
264	43.567286	-89.812146	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	264	7	Muck	Pole				2							2												1				
265	43.566953	-89.812147	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	265	5	Muck	Pole				2	1				1		1				1								1				
266	43.566620	-89.812148	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	266	4	Muck	Pole				2					1		1				1					1			1				
267	43.566287	-89.812149	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	267	2	Muck	Pole				3	1	2					1		2			1				1						1	
268	43.575948	-89.811661	Mirror Lake	Sauk	6/25/2012	EJH & TWH	268	7	Muck	Pole				0																							
269	43.575614	-89.811662	Mirror Lake	Sauk	6/25/2012	EJH & TWH	269	0			TERRESTRIAL																											
270	43.575281	-89.811663	Mirror Lake	Sauk	6/25/2012	EJH & TWH	270	10	Muck	Pole				1					1																		
271	43.574948	-89.811664	Mirror Lake	Sauk	6/25/2012	EJH & TWH	271	9	Muck	Pole				0																							
272	43.574615	-89.811665	Mirror Lake	Sauk	6/25/2012	EJH & TWH	272	10	Muck	Pole				0																							
273	43.574282	-89.811666	Mirror Lake	Sauk	6/25/2012	EJH & TWH	273	11	Muck	Pole				0																							

Point Number	LATITUDE	LONGITUDE	LAKE_NAME	COUNTY	DATE	FIELD_CREW	PNT_NUM	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	EWM	CLP	AQ_MOSS	CALLP	CERDE	CHARA	ELOCA	ELONU	F_AGLAE	FW_SPONGE	HETDU	LEMTU	NAJFL	POTAM	POTEP	POTFR	POTNO	POTST	POTZO	RANAQ	SAGLA	SPIPO	STUPE	WOLFIA	ZIZAQ
274	43.573949	-89.811667	Mirror Lake	Sauk	6/25/2012	EJH & TWH	274	11	Muck	Pole				0																									
275	43.573615	-89.811668	Mirror Lake	Sauk	6/25/2012	EJH & TWH	275	10	Muck	Pole				0																									
276	43.573282	-89.811669	Mirror Lake	Sauk	6/25/2012	EJH & TWH	276	9	Sand	Pole				1					1																			
277	43.572949	-89.811670	Mirror Lake	Sauk	6/25/2012	EJH & TWH	277	9	Muck	Pole				1	1																							
278	43.572616	-89.811672	Mirror Lake	Sauk	6/25/2012	EJH & TWH	278	8	Sand	Pole				0																									
279	43.572283	-89.811673	Mirror Lake	Sauk	6/25/2012	EJH & TWH	279	9	Muck	Pole				1					1						1													
280	43.571950	-89.811674	Mirror Lake	Sauk	6/25/2012	EJH & TWH	280	8	Sand	Pole				3	1				2		2																	
281	43.571617	-89.811675	Mirror Lake	Sauk	6/25/2012	EJH & TWH	281	8	Sand	Pole				1					1		1				1													
282	43.571283	-89.811676	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	282	10	Muck	Pole				1											1													
283	43.570950	-89.811677	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	283	10	Sand	Pole				1					1		1				1													
284	43.570617	-89.811678	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	284	9	Muck	Pole				0																									
285	43.570284	-89.811679	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	285	4	Sand	Pole				3							1				3													
286	43.569951	-89.811680	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	286	4	Sand	Pole				2			1		1		1				2													
287	43.569618	-89.811681	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	287	5	Sand	Pole				3					1		3				2													
288	43.568951	-89.811683	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	288	3	Sand	Pole				1			1				1				1					1							
289	43.568618	-89.811684	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	289	5	Sand	Pole				3					2						1					1							
290	43.568285	-89.811685	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	290	7	Muck	Pole				2					1		2																
291	43.567952	-89.811686	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	291	7	Muck	Pole				2	1				2		1				1													
292	43.567619	-89.811687	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	292	7	Muck	Pole				2	1													1									
293	43.567286	-89.811688	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	293	6	Muck	Pole				2							1																
294	43.566952	-89.811689	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	294	7	Muck	Pole				2							2												1				
295	43.566619	-89.811690	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	295	5	Muck	Pole				3	1				1		1							1									
296	43.566286	-89.811691	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	296	0			SWIM AREA																											
297	43.565953	-89.811692	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	297	4	Muck	Pole				3					1		3				1			1					1				
298	43.565620	-89.811693	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	298	3	Muck	Pole			YES	3					1		3				1					1							
299	43.565287	-89.811694	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	299	2	Muck	Pole				2					1		1				1	1										1	
300	43.564953	-89.811695	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	300	0			TERRESTRIAL																											
301	43.575947	-89.811203	Mirror Lake	Sauk	6/25/2012	EJH & TWH	301	11	Sand	Pole				0																									
302	43.575614	-89.811204	Mirror Lake	Sauk	6/25/2012	EJH & TWH	302	12	Muck	Pole				0																									
303	43.575280	-89.811205	Mirror Lake	Sauk	6/25/2012	EJH & TWH	303	11	Muck	Pole				0																									
304	43.574947	-89.811206	Mirror Lake	Sauk	6/25/2012	EJH & TWH	304	11	Muck	Pole				0																									
305	43.574614	-89.811207	Mirror Lake	Sauk	6/25/2012	EJH & TWH	305	11	Sand	Pole				0																									
306	43.574281	-89.811208	Mirror Lake	Sauk	6/25/2012	EJH & TWH	306	11	Sand	Pole				0																									
307	43.573948	-89.811209	Mirror Lake	Sauk	6/25/2012	EJH & TWH	307	11	Muck	Pole				0																									
308	43.573615	-89.811210	Mirror Lake	Sauk	6/25/2012	EJH & TWH	308	10	Sand	Pole				0																									
309	43.573282	-89.811211	Mirror Lake	Sauk	6/25/2012	EJH & TWH	309	11	Muck	Pole				0																									
310	43.572948	-89.811212	Mirror Lake	Sauk	6/25/2012	EJH & TWH	310	11	Muck	Pole				0																									
311	43.572615	-89.811213	Mirror Lake	Sauk	6/25/2012	EJH & TWH	311	10	Muck	Pole				1								1																
312	43.572282	-89.811214	Mirror Lake	Sauk	6/25/2012	EJH & TWH	312	7	Sand	Pole				0																									

Point Number	LATITUDE	LONGITUDE	LAKE_NAME	COUNTY	DATE	FIELD_CREW	PNT_NUM	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	EWM	CLP	AQ_MOSS	CALLP	CERDE	CHARA	ELOCA	ELONU	F_AGLAE	FW_SPONGE	HETDU	LEMTU	NAJFL	POTAM	POTEP	POTFR	POTNO	POTST	POTZO	RANAQ	SAGLA	SPIPO	STUPE	WOLFIA	ZIZAQ
313	43.571949	-89.811215	Mirror Lake	Sauk	6/25/2012	EJH & TWH	313	11	Sand	Pole				0																									
314	43.571616	-89.811216	Mirror Lake	Sauk	6/25/2012	EJH & TWH	314	10	Muck	Pole				0																									
315	43.571283	-89.811217	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	315	5	Sand	Rope				0																									
316	43.570283	-89.811221	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	316	4	Sand	Pole				3					2		1				2													
317	43.567618	-89.811229	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	317	1	Sand	Pole				2							1		2		1	1											1	
318	43.565952	-89.811234	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	318	0			SWIM AREA																											
319	43.565619	-89.811235	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	319	4	Muck	Pole			YES	3					1		3							1				1						
320	43.565286	-89.811236	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	320	5	Muck	Pole				3	1	1					3												1					
321	43.564953	-89.811237	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	321	2	Muck	Pole				2	1	1			1		1							1					1					
322	43.564620	-89.811238	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	322	4	Muck	Pole				2	1				1		1							1										
323	43.564286	-89.811239	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	323	4	Muck	Pole			YES	3					1		3					1											1	
324	43.576279	-89.810744	Mirror Lake	Sauk	6/25/2012	EJH & TWH	324	4	Sand	Pole				0																								
325	43.575946	-89.810745	Mirror Lake	Sauk	6/25/2012	EJH & TWH	325	11	Muck	Pole				0																								
326	43.575613	-89.810746	Mirror Lake	Sauk	6/25/2012	EJH & TWH	326	11	Muck	Pole				0																								
327	43.575280	-89.810747	Mirror Lake	Sauk	6/25/2012	EJH & TWH	327	11	Muck	Pole				1					1				1															
328	43.574947	-89.810748	Mirror Lake	Sauk	6/25/2012	EJH & TWH	328	11	Muck	Pole				0																								
329	43.574613	-89.810749	Mirror Lake	Sauk	6/25/2012	EJH & TWH	329	11	Muck	Pole				0									1															
330	43.574280	-89.810750	Mirror Lake	Sauk	6/25/2012	EJH & TWH	330	5	Sand	Pole				1											1													
331	43.565618	-89.810777	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	331	0			NONNAVIGABLE (PLANTS)																											
332	43.565285	-89.810778	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	332	3	Muck	Pole			YES	3	1				1		2						1		1									1	
333	43.564952	-89.810779	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	333	3	Muck	Pole				2					1		1							1								1	
334	43.564619	-89.810780	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	334	2	Muck	Pole				3					1									1								3	
335	43.564286	-89.810781	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	335	3	Muck	Pole			YES	3		1			1		1															2	
336	43.563952	-89.810782	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	336	3	Muck	Pole			YES	3							1						1					1				2	1
337	43.563619	-89.810783	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	337	3	Muck	Pole			YES	2		1					1									1						2	
338	43.563286	-89.810784	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	338	4	Muck	Pole				2					1		1									2							
339	43.562953	-89.810785	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	339	3	Muck	Pole				2							1							1									
340	43.562620	-89.810786	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	340	1	Muck	Pole				1		1										1				1							1	
341	43.576278	-89.810285	Mirror Lake	Sauk	6/25/2012	EJH & TWH	341	11	Muck	Pole				0																								
342	43.575945	-89.810286	Mirror Lake	Sauk	6/25/2012	EJH & TWH	342	12	Muck	Pole				0																								
343	43.575612	-89.810287	Mirror Lake	Sauk	6/25/2012	EJH & TWH	343	11	Muck	Pole				0																								
344	43.575279	-89.810288	Mirror Lake	Sauk	6/25/2012	EJH & TWH	344	11	Muck	Pole				0																								
345	43.574946	-89.810290	Mirror Lake	Sauk	6/25/2012	EJH & TWH	345	11	Sand	Pole				0																								
346	43.562952	-89.810327	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	346	0			NONNAVIGABLE (PLANTS)																											
347	43.562619	-89.810328	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	347	0			NONNAVIGABLE (PLANTS)																											
348	43.562286	-89.810329	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	348	2	Muck	Pole			YES	2							1		1				1										1	
349	43.576611	-89.809826	Mirror Lake	Sauk	6/25/2012	EJH & TWH	349	11	Muck	Pole				0																								
350	43.576278	-89.809827	Mirror Lake	Sauk	6/25/2012	EJH & TWH	350	12	Sand	Pole				0																								
351	43.575944	-89.809828	Mirror Lake	Sauk	6/25/2012	EJH & TWH	351	12	Sand	Pole				0																								

Point Number	LATITUDE	LONGITUDE	LAKE_NAME	COUNTY	DATE	FIELD_CREW	PNT_NUM	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	EWM	CLP	AQ_MOSS	CALLP	CERDE	CHARA	ELOCA	ELONU	F_AGLAE	FW_SPONGE	HETDU	LEMTU	NAJFL	POTAM	POTEP	POTFR	POTNO	POTST	POTZO	RANAQ	SAGLA	SPIPO	STUPE	WOLFIA	ZIZAQ
352	43.575611	-89.809829	Mirror Lake	Sauk	6/25/2012	EJH & TWH	352	11	Muck	Pole				0																									
353	43.575278	-89.809830	Mirror Lake	Sauk	6/25/2012	EJH & TWH	353	11	Muck	Pole				0																									
354	43.574945	-89.809831	Mirror Lake	Sauk	6/25/2012	EJH & TWH	354	8	Muck	Pole				0																									
355	43.576943	-89.809367	Mirror Lake	Sauk	6/25/2012	EJH & TWH	355	12	Sand	Pole				0																									
356	43.576610	-89.809368	Mirror Lake	Sauk	6/25/2012	EJH & TWH	356	13	Muck	Pole				0																									
357	43.576277	-89.809369	Mirror Lake	Sauk	6/25/2012	EJH & TWH	357	13	Sand	Pole				0																									
358	43.574611	-89.809374	Mirror Lake	Sauk	6/25/2012	EJH & TWH	358	0			TEMPORARY OBSTACLE																													
359	43.577276	-89.808907	Mirror Lake	Sauk	6/25/2012	EJH & TWH	359	10	Sand	Pole				0																									
360	43.576942	-89.808909	Mirror Lake	Sauk	6/25/2012	EJH & TWH	360	13	Muck	Pole				0																									
361	43.576609	-89.808910	Mirror Lake	Sauk	6/25/2012	EJH & TWH	361	12	Muck	Pole				0																									
362	43.577275	-89.808449	Mirror Lake	Sauk	6/25/2012	EJH & TWH	362	12	Muck	Pole				0																									
363	43.576942	-89.808450	Mirror Lake	Sauk	6/25/2012	EJH & TWH	363	13	Muck	Pole				0																									
364	43.576608	-89.808451	Mirror Lake	Sauk	6/25/2012	EJH & TWH	364	10	Sand	Pole				0																									
365	43.577607	-89.807990	Mirror Lake	Sauk	6/25/2012	EJH & TWH	365	11	Muck	Pole				0					1																			
366	43.577274	-89.807991	Mirror Lake	Sauk	6/25/2012	EJH & TWH	366	12	Sand	Pole				0																									
367	43.576941	-89.807992	Mirror Lake	Sauk	6/25/2012	EJH & TWH	367	13	Muck	Pole				0																									
368	43.577940	-89.807531	Mirror Lake	Sauk	6/25/2012	EJH & TWH	368	0	Rock	Pole				0																									
369	43.577606	-89.807532	Mirror Lake	Sauk	6/25/2012	EJH & TWH	369	13	Sand	Pole				0																									
370	43.577273	-89.807533	Mirror Lake	Sauk	6/25/2012	EJH & TWH	370	13	Sand	Pole				0																									
371	43.578272	-89.807071	Mirror Lake	Sauk	6/25/2012	EJH & TWH	371	6	Sand	Pole				0																									
372	43.577939	-89.807072	Mirror Lake	Sauk	6/25/2012	EJH & TWH	372	13	Sand	Pole				0																									
373	43.577606	-89.807073	Mirror Lake	Sauk	6/25/2012	EJH & TWH	373	11	Sand	Pole				0																									
374	43.578604	-89.806612	Mirror Lake	Sauk	6/25/2012	EJH & TWH	374	7	Muck	Pole				1					1																			
375	43.578271	-89.806613	Mirror Lake	Sauk	6/25/2012	EJH & TWH	375	13	Sand	Pole				0																									
376	43.577938	-89.806614	Mirror Lake	Sauk	6/25/2012	EJH & TWH	376	13	Muck	Pole				0																									
377	43.578937	-89.806153	Mirror Lake	Sauk	6/25/2012	EJH & TWH	377	9	Sand	Pole				0			1																					
378	43.578604	-89.806154	Mirror Lake	Sauk	6/25/2012	EJH & TWH	378	11	Sand	Pole				1					1																			
379	43.579269	-89.805693	Mirror Lake	Sauk	6/25/2012	EJH & TWH	379	0	Sand	Pole				1									1			1												
380	43.578936	-89.805694	Mirror Lake	Sauk	6/25/2012	EJH & TWH	380	13	Sand	Pole				0																									
381	43.579268	-89.805235	Mirror Lake	Sauk	6/25/2012	EJH & TWH	381	11	Sand	Pole				0																									
382	43.579268	-89.804777	Mirror Lake	Sauk	6/25/2012	EJH & TWH	382	13	Sand	Pole				1					1																			
383	43.579267	-89.804318	Mirror Lake	Sauk	6/25/2012	EJH & TWH	383	11	Muck	Pole				0																									
384	43.579266	-89.803860	Mirror Lake	Sauk	6/25/2012	EJH & TWH	384	10	Sand	Pole				0																									
385	43.579265	-89.803402	Mirror Lake	Sauk	6/25/2012	EJH & TWH	385	7	Muck	Pole				1					1																			
386	43.579594	-89.800651	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	386	2	Sand	Pole				0																									
387	43.579593	-89.800193	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	387	6	Sand	Pole				1											1													
388	43.583257	-89.799723	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	388	0			TERRESTRIAL																													
389	43.582923	-89.799724	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	389	13	Sand	Pole				0																									
390	43.581924	-89.799727	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	390	11	Sand	Pole				0																									

Point Number	LATITUDE	LONGITUDE	LAKE_NAME	COUNTY	DATE	FIELD_CREW	PNT_NUM	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISIANCE	Total Rake Fullness	EWM	CLP	AQ_MOSS	CALLP	CERDE	CHARA	ELOCA	ELONU	F_AGLAE	FW_SPONGE	HETDU	LEMTU	NAJFL	POTAM	POTEP	POTFR	POTNO	POTST	POTZO	RANAQ	SAGLA	SPIPO	STUPE	WOLFIA	ZIZAQ
391	43.581591	-89.799728	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	391	14	Sand	Pole				0																									
392	43.581258	-89.799729	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	392	10	Sand	Pole				0																									
393	43.580925	-89.799730	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	393	8	Sand	Pole				0																									
394	43.580591	-89.799731	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	394	5	Sand	Pole				0																									
395	43.580258	-89.799732	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	395	7	Sand	Pole				0																									
396	43.579925	-89.799734	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	396	8	Sand	Pole				0																									
397	43.579592	-89.799735	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	397	8	Sand	Pole				0																									
398	43.583589	-89.799263	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	398	15	Sand	Pole				0																									
399	43.583921	-89.798804	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	399	5	Sand	Pole				0																									
400	43.584254	-89.798344	Mirror Lake	Sauk	6/25/2012	BTB & DAC & EJG	400	14	Sand	Pole				0																									