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
  - Two field technicians
  - Four summer interns
- Services
  - Science and planning
- Philosophy
  - Promote realistic planning
  - Assist, not direct

Onterra LLC Lake Management Planning

Why create a lake management plan?

- To create a better understanding of 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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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
  - Aquatic Plant Surveys
  - Fisheries Data Integration
  - Shoreline Assessment
  - 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 → Range → **Natural**

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Aquatic Plant Surveys

- Concerned with both native and non-native plants

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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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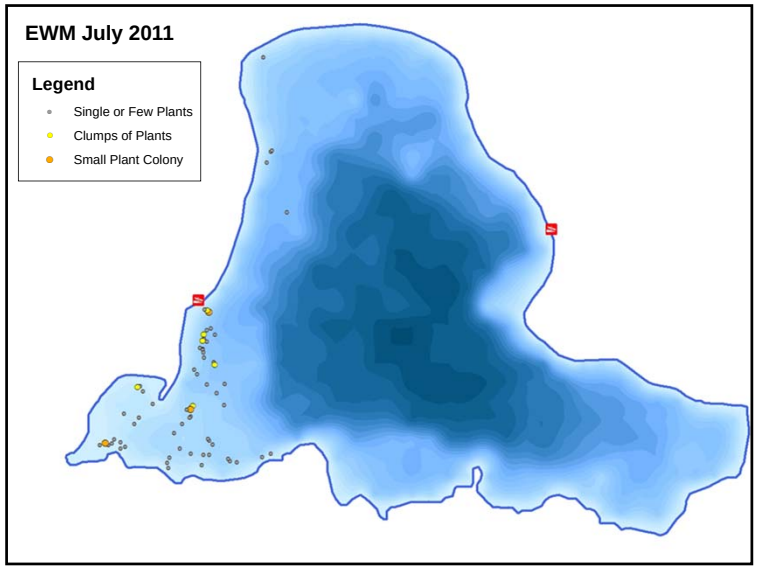
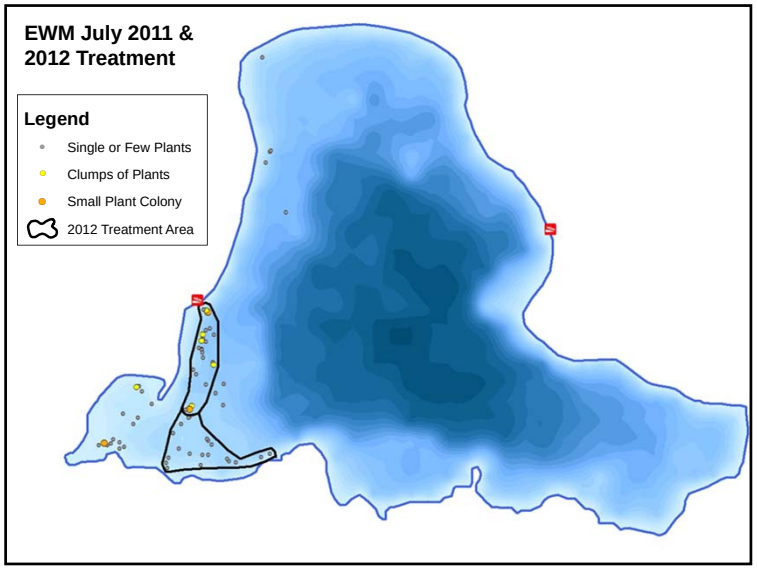
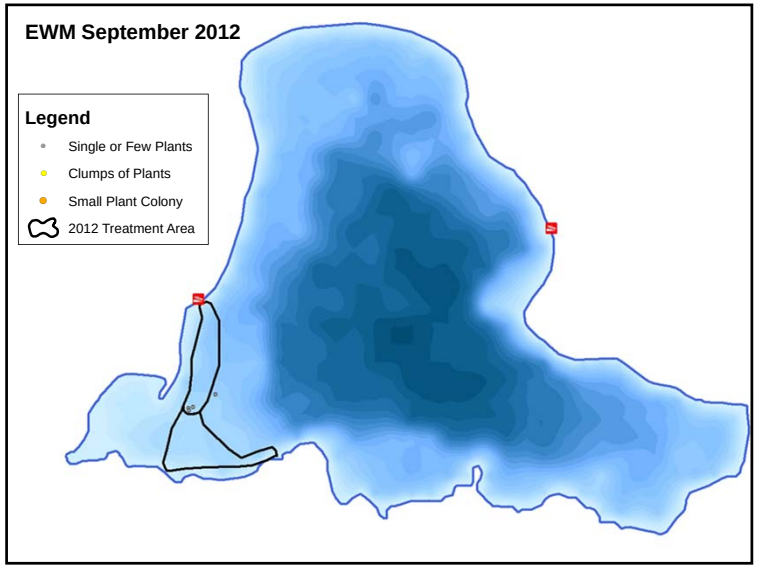
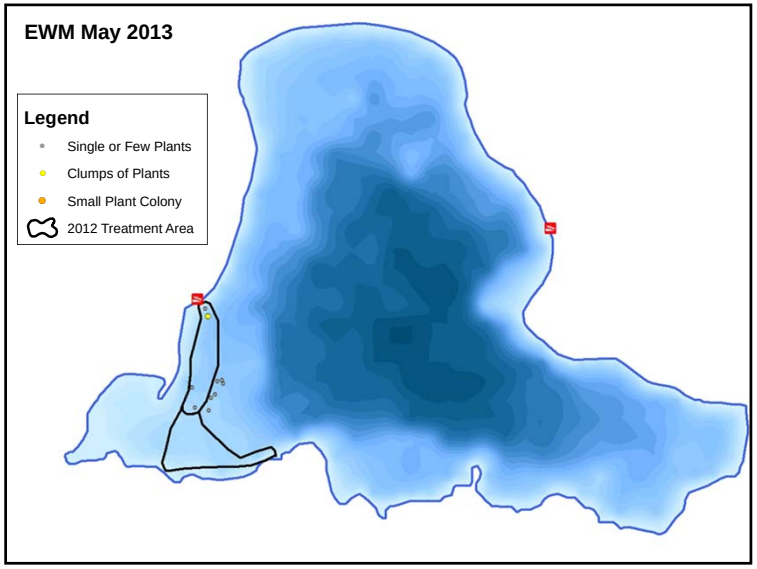
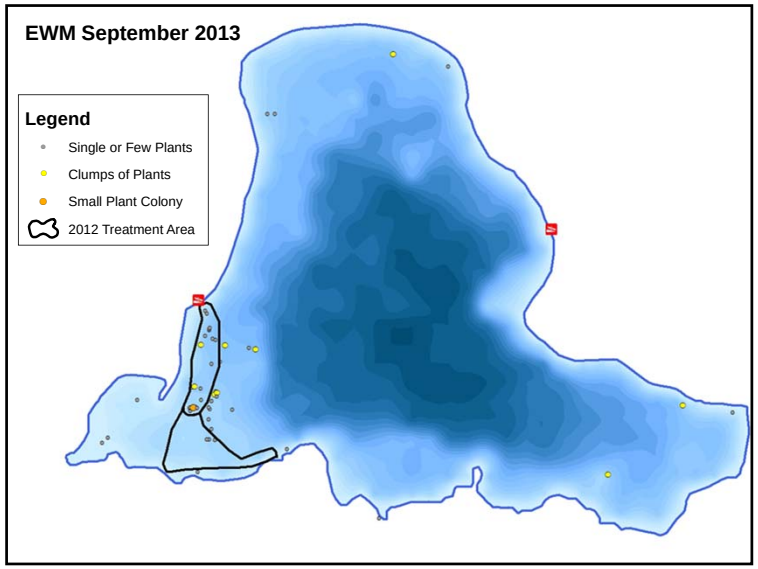
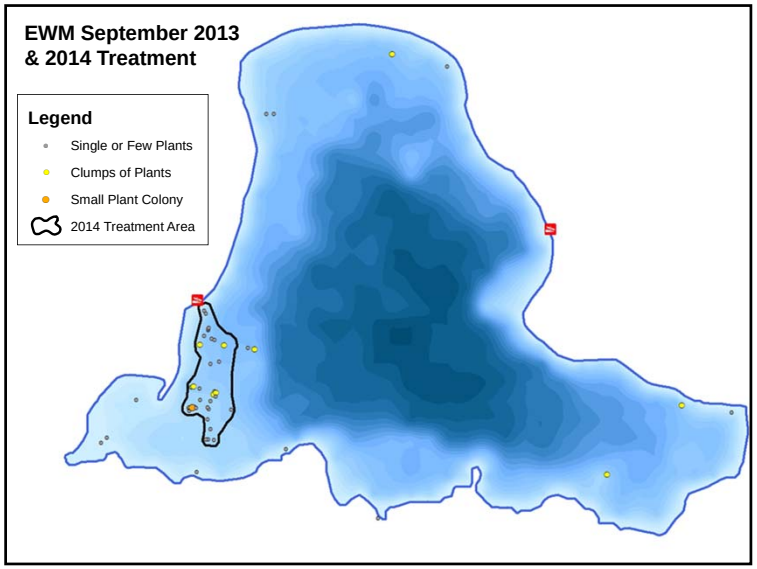

EWM July 2011
Legend
Single or Few Plants
Clumps of Plants
Small Plant Colony

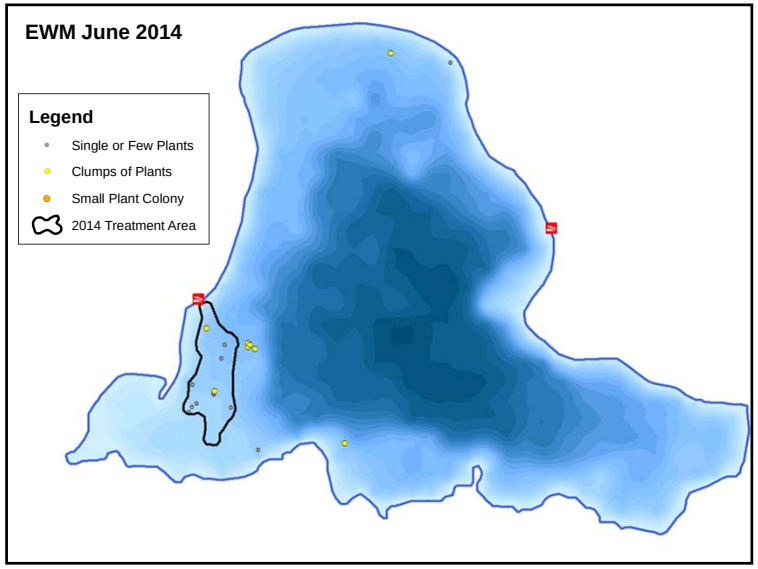

EWM July 2011 &
2012 Treatment
Legend
Single or Few Plants
Clumps of Plants
Small Plant Colony
2012 Treatment Area


EWM September 2012
Legend
Single or Few Plants
Clumps of Plants
Small Plant Colony
2012 Treatment Area


EWM May 2013
Legend
Single or Few Plants
Clumps of Plants
Small Plant Colony
2012 Treatment Area







Aquatic Plant Surveys

- Concerned with both native and non-native plants
- Multiple surveys used in assessment
  - Early-season AIS survey
  - Point-intercept survey

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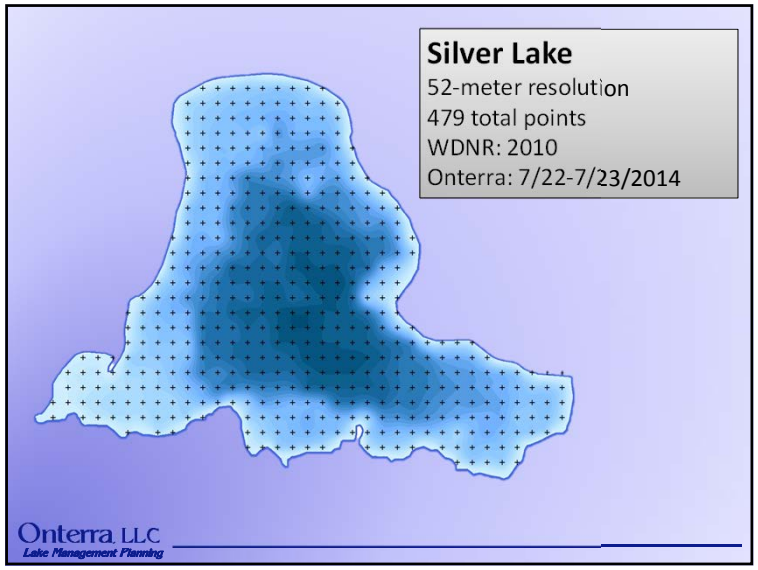

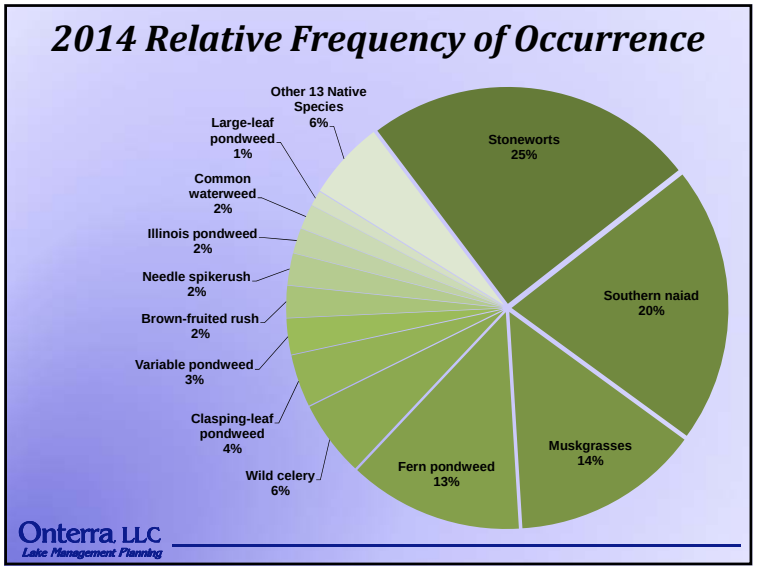

Aquatic Plant Surveys

- 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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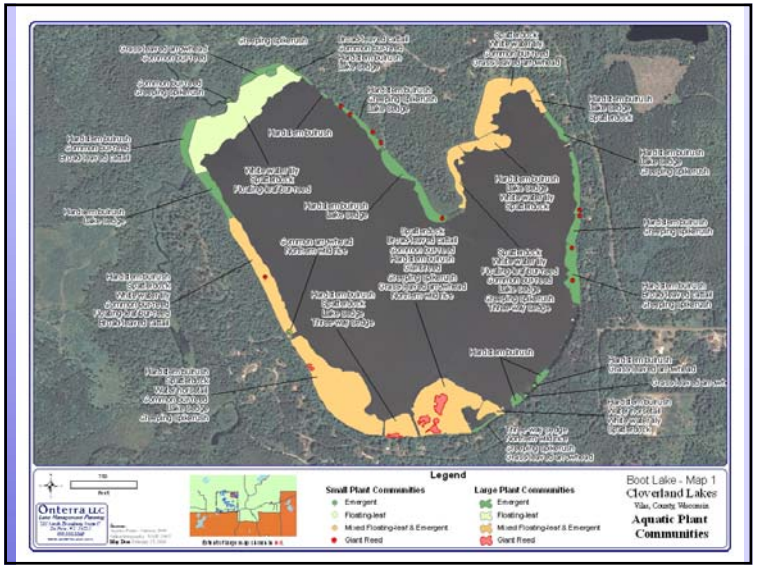

Aquatic Plant Surveys

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

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Fisheries Data Integration

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

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Stakeholder Survey

- Standard survey used as base
  - Paper- or web-based
  - 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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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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Presentation Outline

- Current Project Overview / Update
  - Planning Process
  - Study Results
- Next Steps

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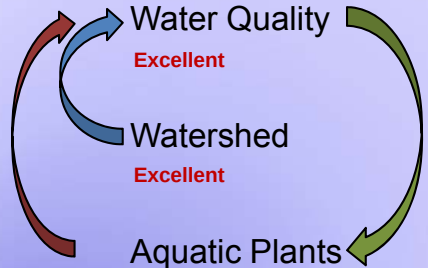
Study Components



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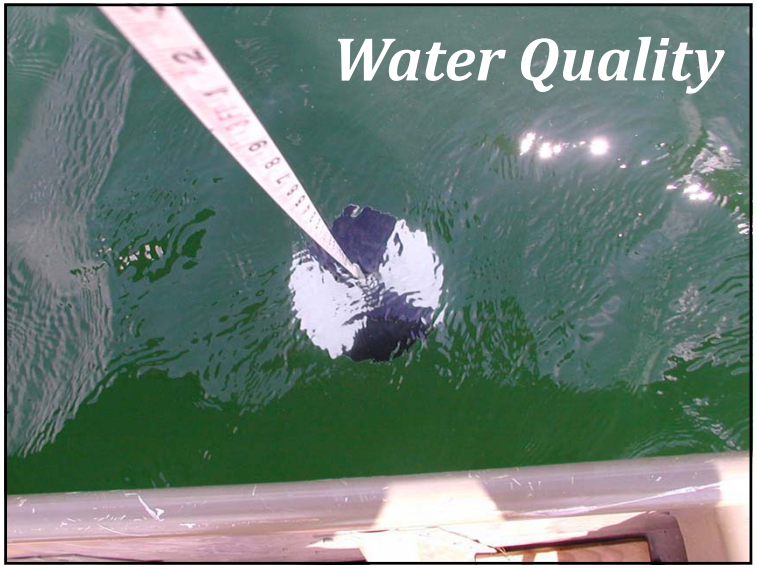
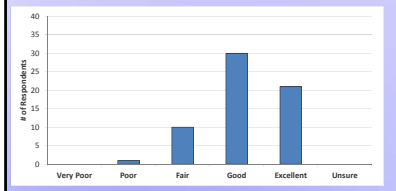
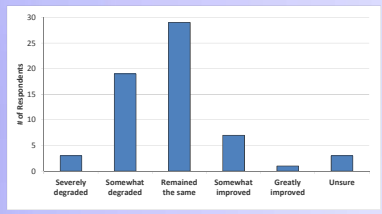


Stakeholder Survey – Water Quality

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



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



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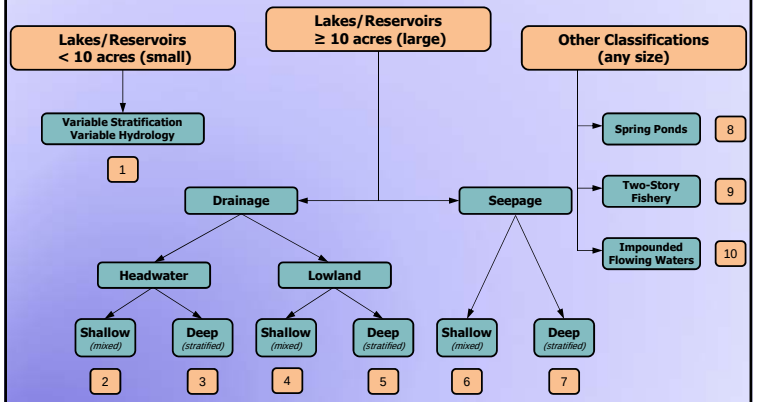
Wisconsin Lakes Natural Community Types



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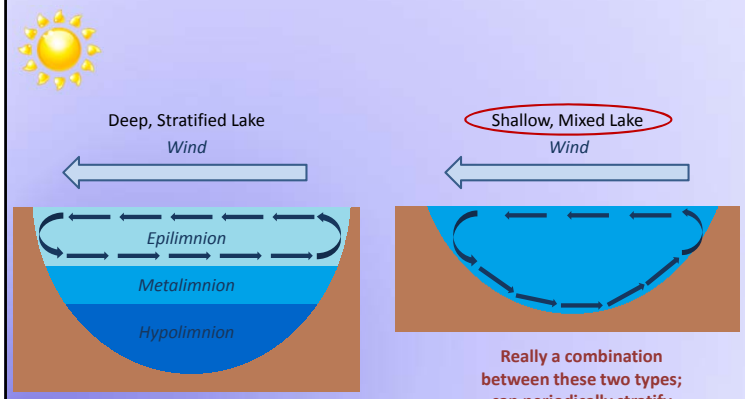
Wisconsin Lakes Classification



Really a combination between these two types; can periodically stratify during periods of calm weather

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Water Quality

Phosphorus (Limiting Plant Nutrient)

Nitrogen:Phosphorus Ratio July 2014: 35:1

Chlorophyll-*a* (Algal Abundance)

Very Low

Water Clarity (Secchi Disk)

Very High

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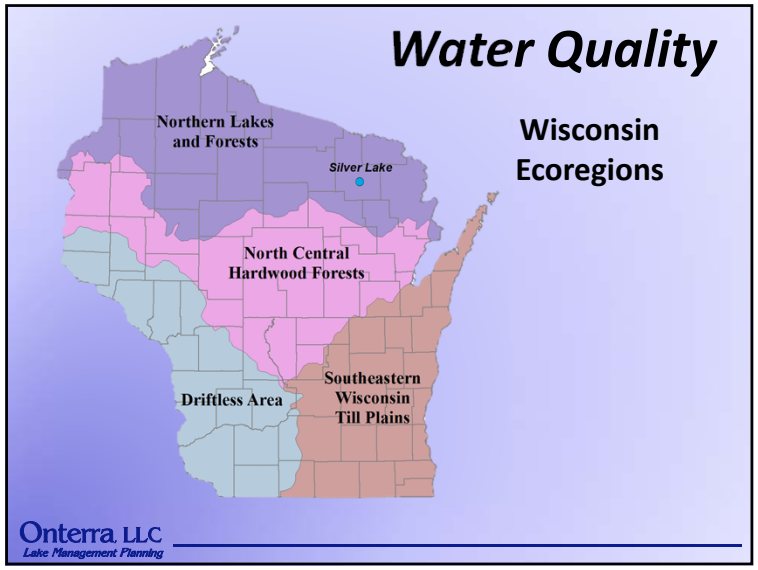
Water Quality
Wisconsin Ecoregions
Northern Lakes and Forests
Silver Lake
North Central Hardwood Forests
Driftless Area
Southeastern Wisconsin Till Plains
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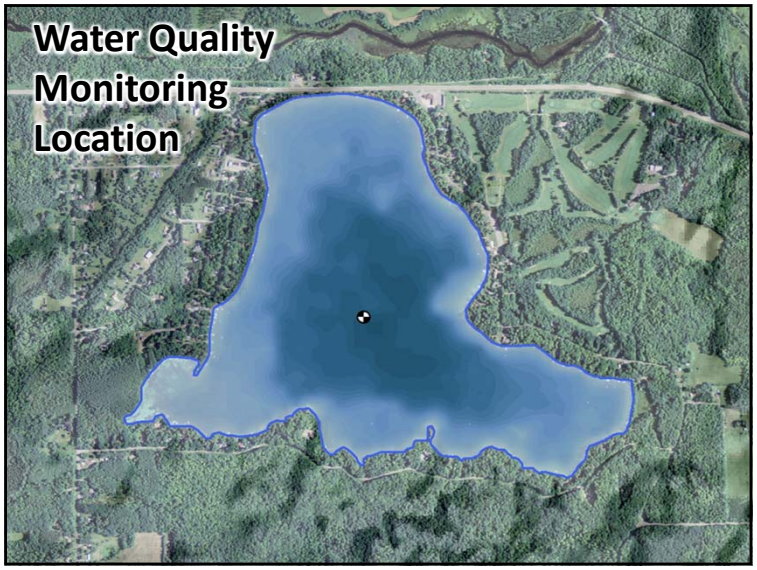
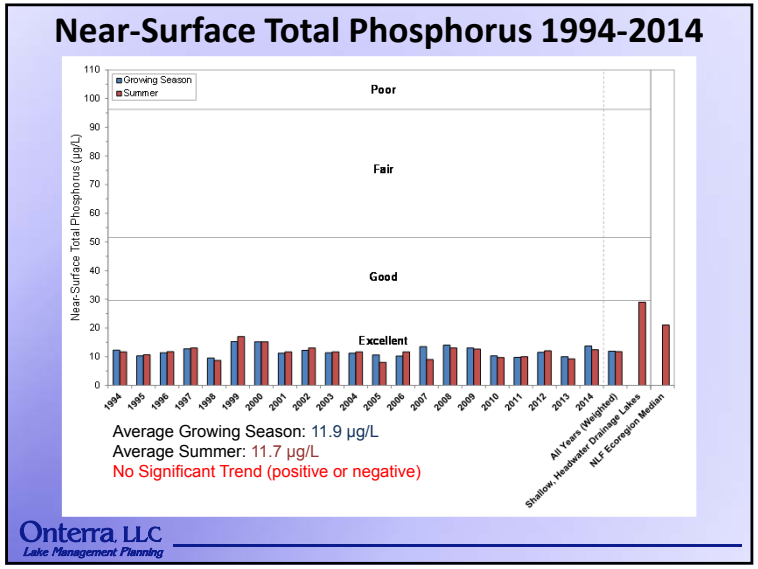

Water Quality Monitoring Location


Near-Surface Total Phosphorus 1994-2014
Growing Season
Summer
Poor
Fair
Good
Excellent
Near-Surface Total Phosphorus (µg/L)
Average Growing Season: 11.9 µg/L
Average Summer: 11.7 µg/L
No Significant Trend (positive or negative)
All Years (Weighted)
Shallow, Headwater Drainage Lakes
NLF Ecoregion Median
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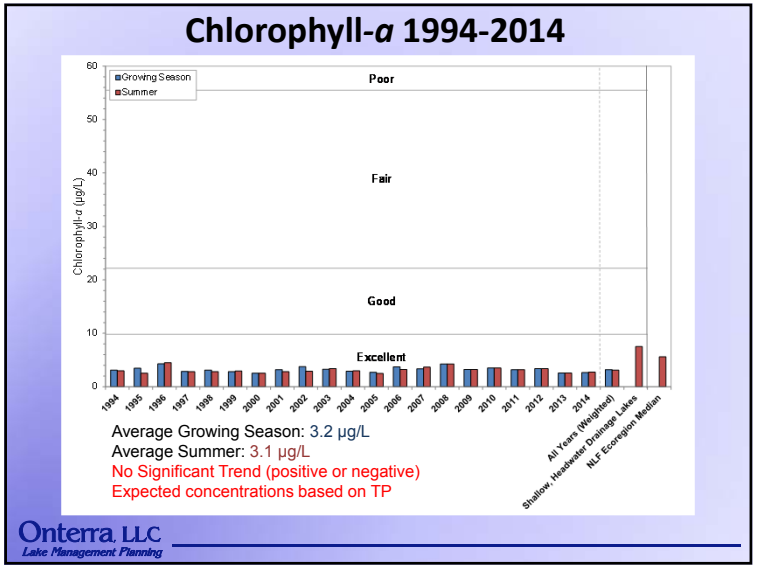
Chlorophyll-a 1994-2014
Growing Season
Summer
Poor
Fair
Good
Excellent
Chlorophyll-a (µg/L)
Average Growing Season: 3.2 µg/L
Average Summer: 3.1 µg/L
No Significant Trend (positive or negative)
Expected concentrations based on TP
All Years (Weighted)
Shallow, Headwater Drainage Lakes
NLF Ecoregion Median
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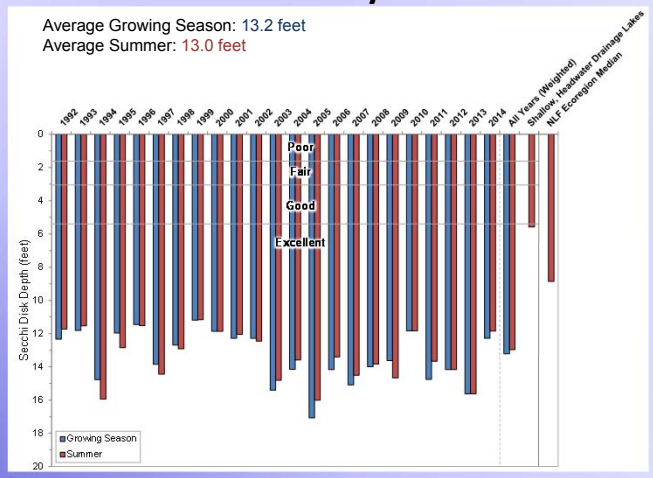
Secchi Disk Clarity 1992-2014



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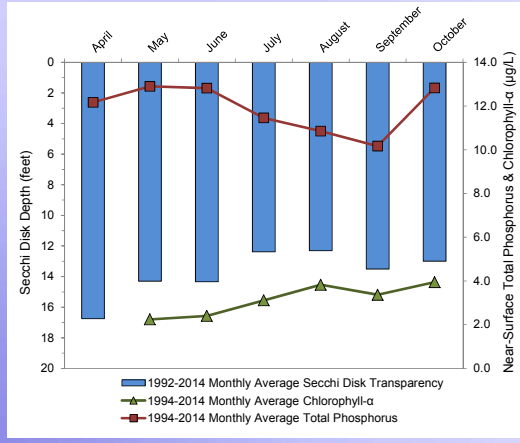
Water Quality Over the Growing Season



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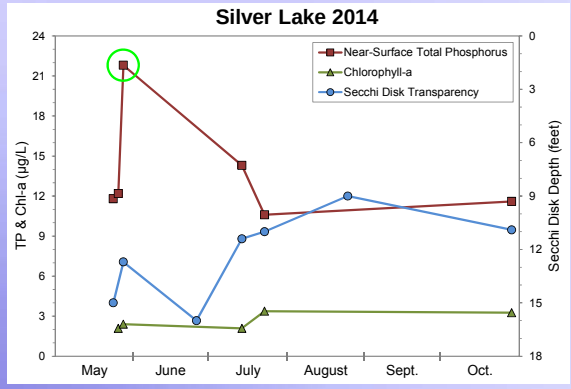
2014 Water Quality



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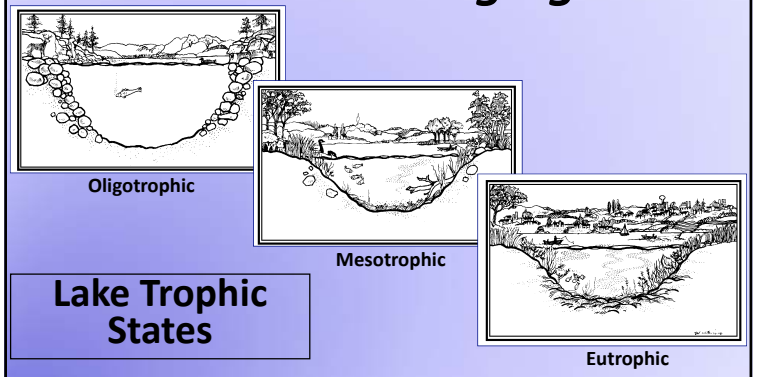
Eutrophication -Lake Aging



Lake Trophic States

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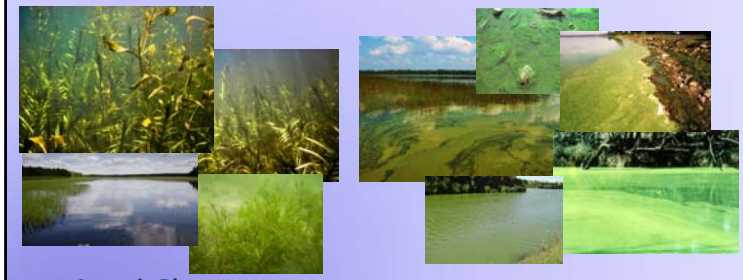
Shallow Lakes are Special

Clear State **Turbid State**



Aquatic Plants are Incredibly Important

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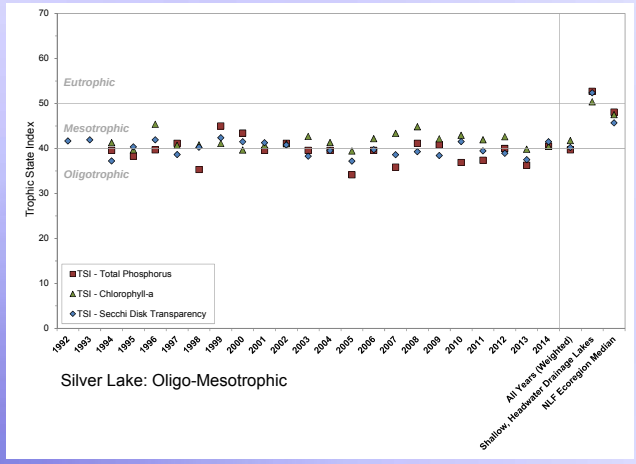
Trophic State Index



Silver Lake: Oligo-Mesotrophic

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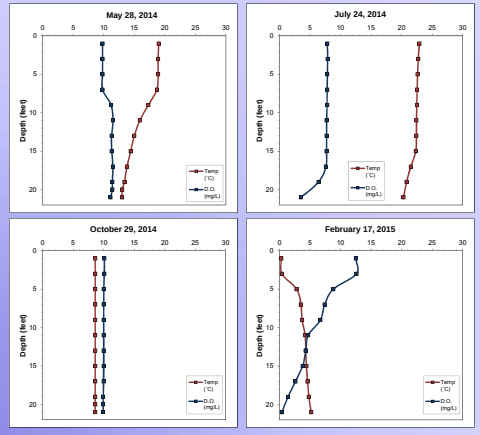
Dissolved Oxygen



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Additional Water Quality Parameters

pH (Scale 0 – 14; <7 acidic, >7 alkaline, =7 neutral)
- Silver Lake: 7.8 (Normal range 5.2 – 8.4)

Alkalinity (Lake's capacity to resist changes in pH)
- Silver Lake: 32.4 (mg/L as $CaCO_3$)
- Low sensitivity to acid rain

Calcium
- Silver Lake: 6.8 mg/L
- Low susceptibility to zebra mussel establishment
- 2014 plankton tows negative for zebra mussel larvae (veligers)

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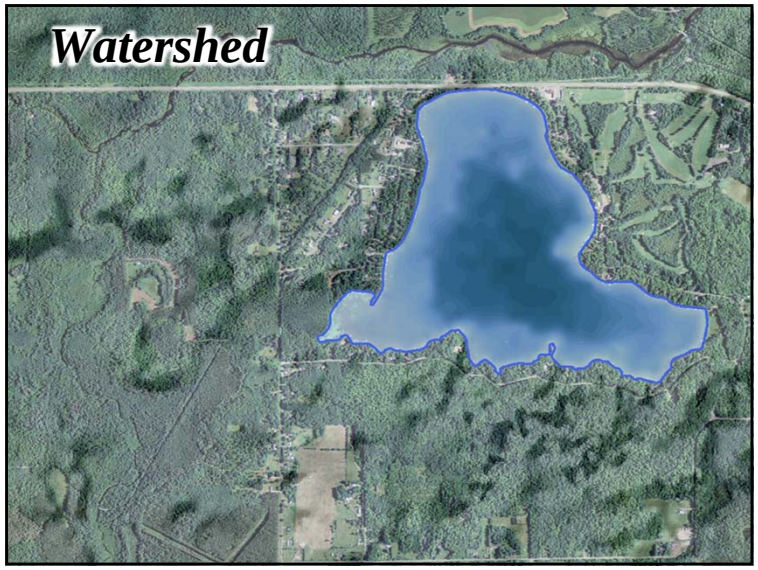
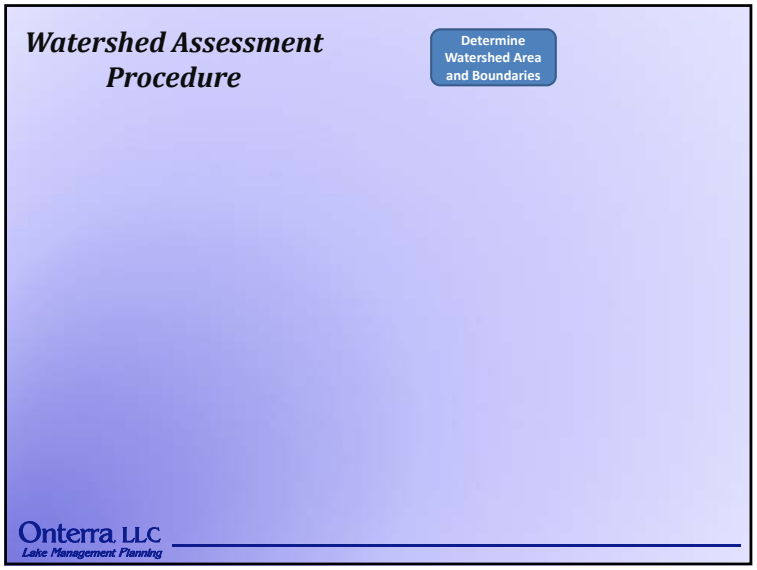

Watershed


Watershed Assessment Procedure
Determine Watershed Area and Boundaries
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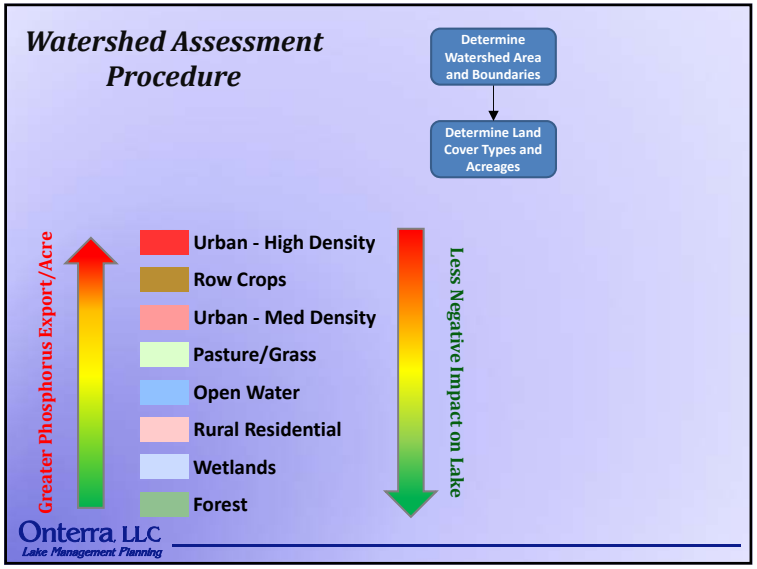
Watershed
~884 acres
WS:LA = 2:1
Water Residence Time: ~5 years


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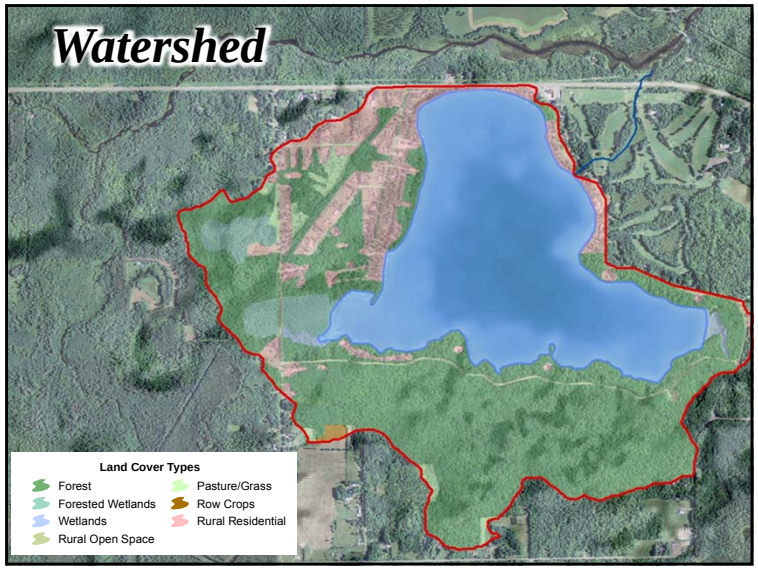
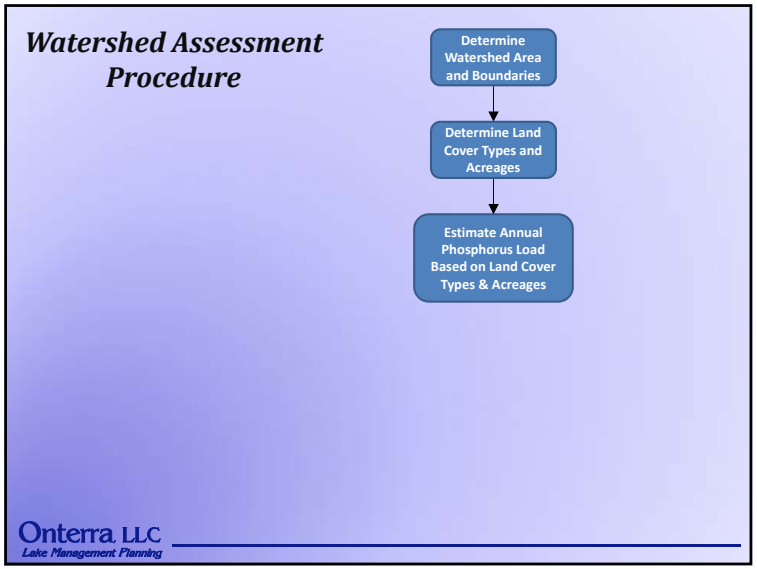

Watershed
Land Cover Types
Forest
Forested Wetlands
Wetlands
Rural Open Space
Pasture/Grass
Row Crops
Rural Residential


Watershed Assessment Procedure
Determine Watershed Area and Boundaries
Determine Land Cover Types and Acreages
Estimate Annual Phosphorus Load Based on Land Cover Types & Acreages
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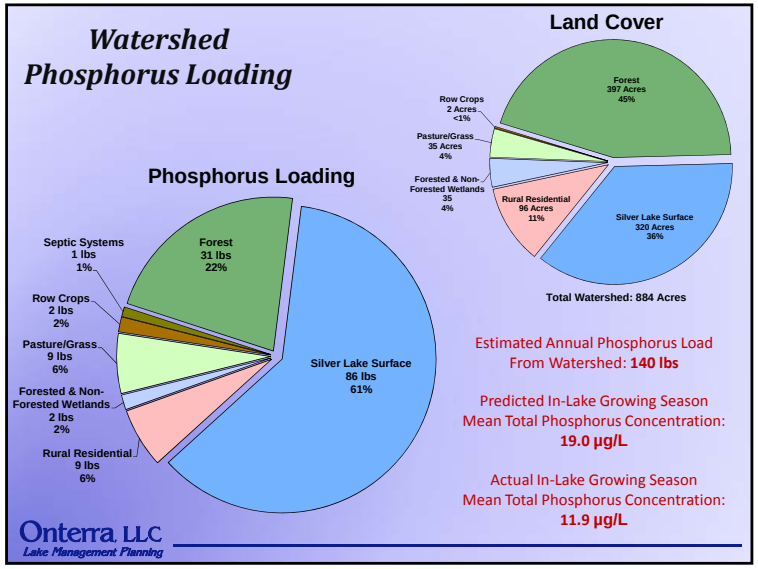
Watershed Phosphorus Loading
Land Cover
Forest 397 Acres 45%
Row Crops 2 Acres <1%
Pasture/Grass 35 Acres 4%
Forested & Non-Forested Wetlands 35 4%
Rural Residential 96 Acres 11%
Silver Lake Surface 320 Acres 36%
Total Watershed: 884 Acres
Phosphorus Loading
Septic Systems 1 lbs 1%
Forest 31 lbs 22%
Row Crops 2 lbs 2%
Pasture/Grass 9 lbs 6%
Forested & Non-Forested Wetlands 2 lbs 2%
Rural Residential 9 lbs 6%
Silver Lake Surface 86 lbs 61%
Estimated Annual Phosphorus Load From Watershed: 140 lbs
Predicted In-Lake Growing Season Mean Total Phosphorus Concentration: 19.0 µg/L
Actual In-Lake Growing Season Mean Total Phosphorus Concentration: 11.9 µg/L
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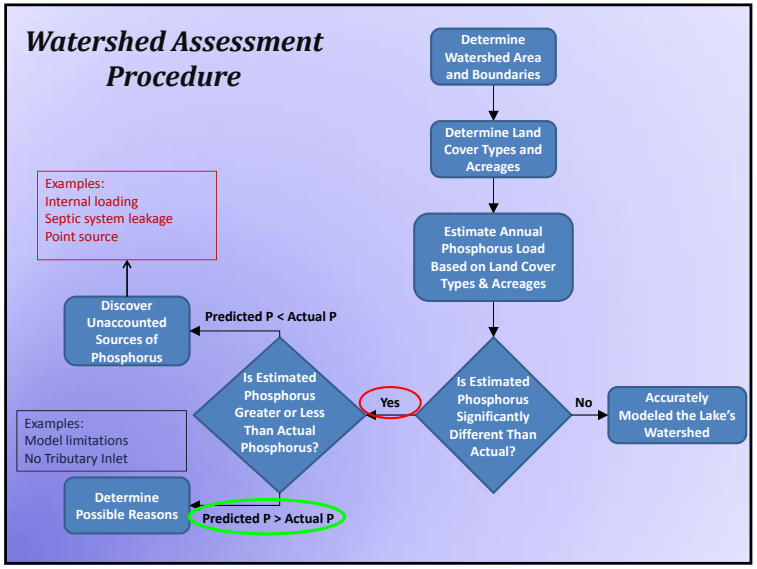
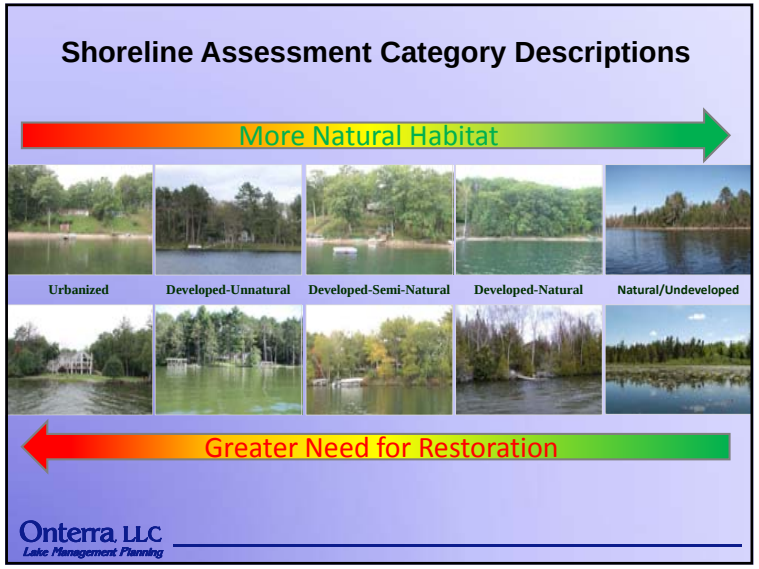
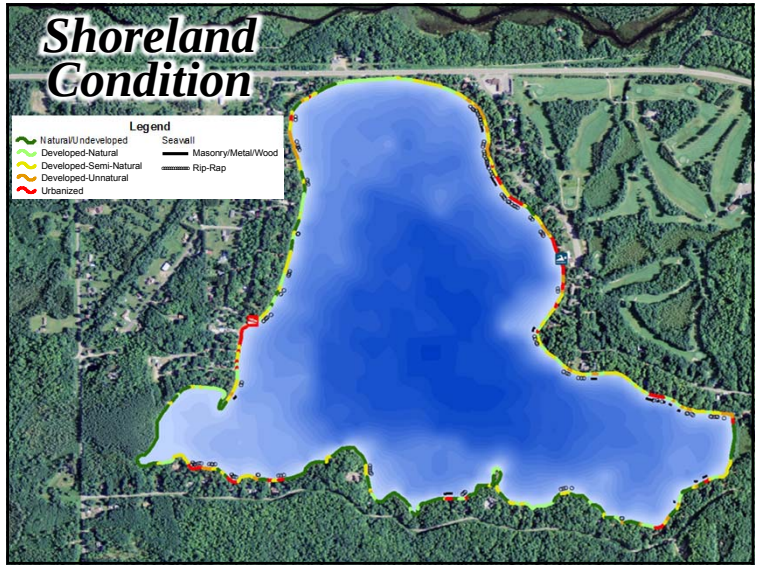

Watershed Assessment Procedure
Determine Watershed Area and Boundaries
Determine Land Cover Types and Acreages
Estimate Annual Phosphorus Load Based on Land Cover Types & Acreages
Examples:
Internal loading
Septic system leakage
Point source
Discover Unaccounted Sources of Phosphorus
Predicted P < Actual P
Is Estimated Phosphorus Greater or Less Than Actual Phosphorus?
Yes
Is Estimated Phosphorus Significantly Different Than Actual?
No
Accurately Modeled the Lake's Watershed
Examples:
Model limitations
No Tributary Inlet
Determine Possible Reasons
Predicted P > Actual P

Shoreland Assessment

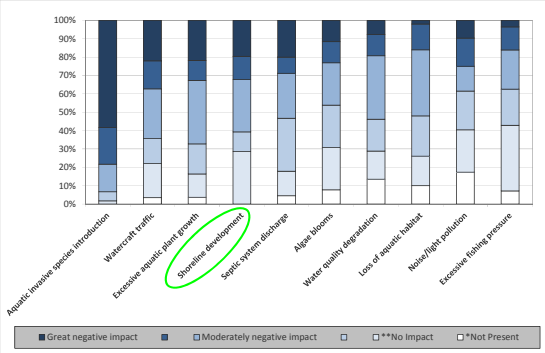
- Shoreland area is important for buffering runoff and provides valuable habitat for aquatic and terrestrial wildlife.
- EPA National Lakes Assessment results indicate shoreland development has greatest negative impact to health of our nation's lakes.
- It does not look at lake shoreline on a property-by-property basis.
- Assessment ranks shoreland area from shoreline back 35 feet





Stakeholder Survey: Shoreline Development

To what level do you believe each of the following factors may currently be negatively impacting Silver Lake?



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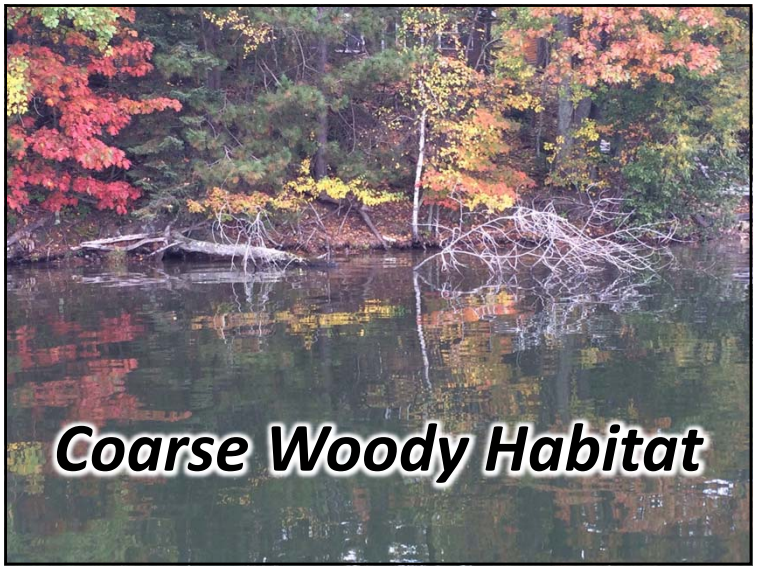

Coarse Woody Habitat

- 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 emergent/shoreline CWH in Silver Lake

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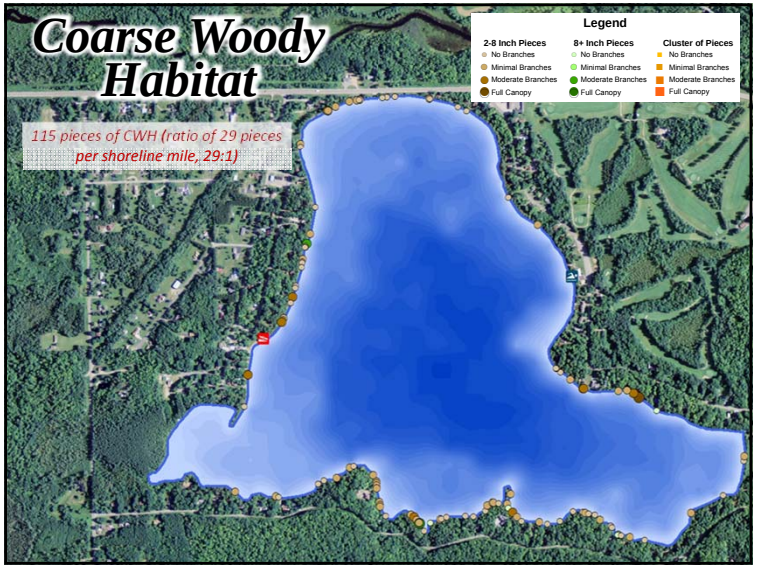

Aquatic Plant Surveys

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

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Early-Season AIS Survey

- Completed June 19, 2014
- Primary focus of locating potential occurrences of Curly-leaf pondweed
- No Curly-leaf pondweed located

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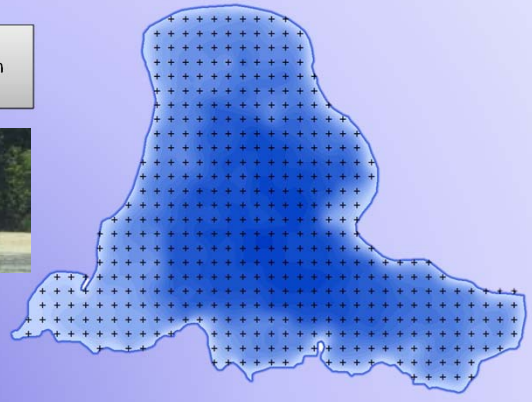
Whole-Lake Point-Intercept Survey (Completed July 22-23, 2014)

Silver Lake
52-meter resolution
479 total points



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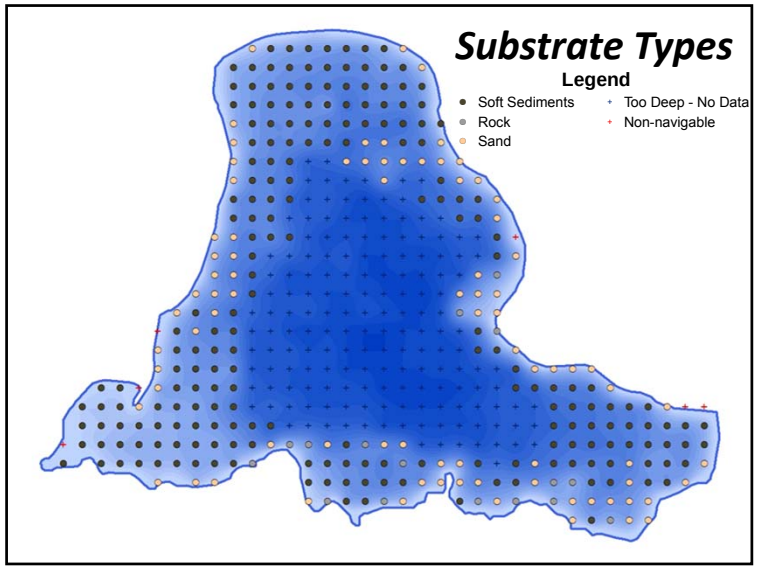
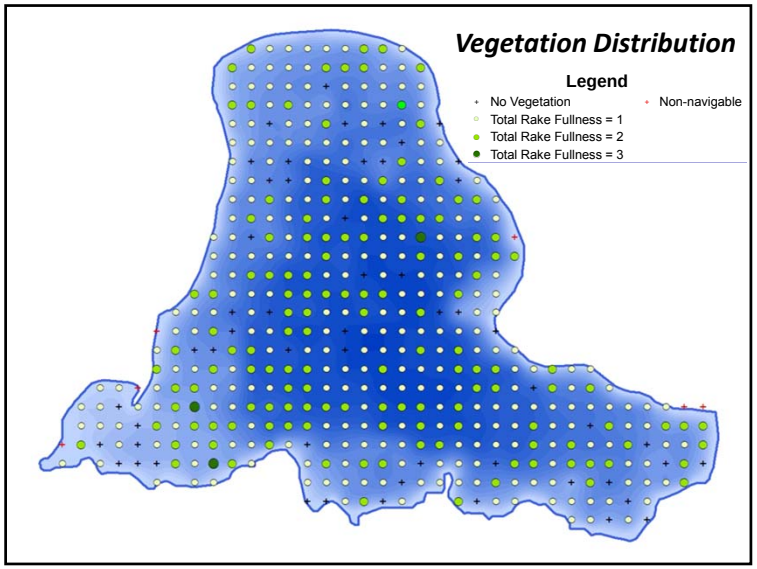
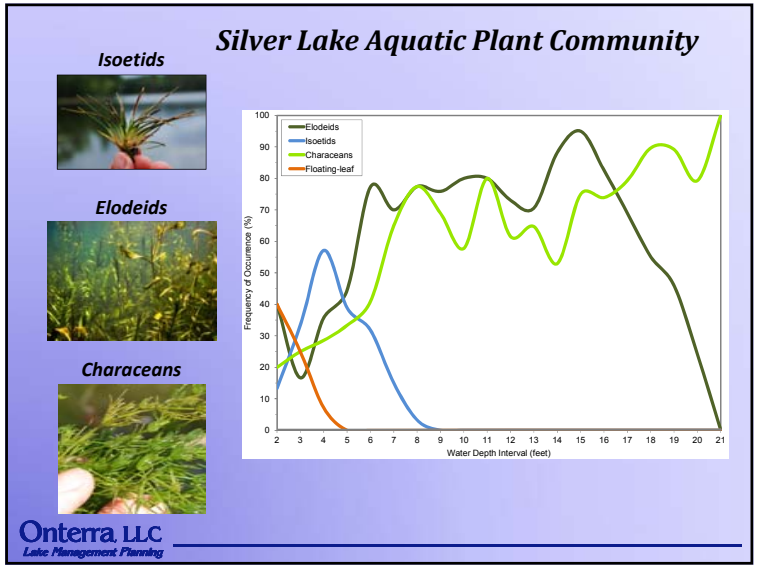
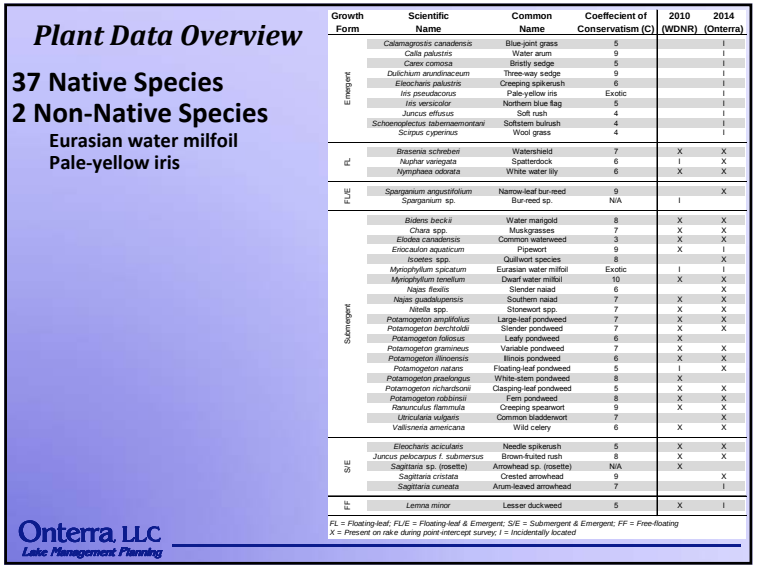




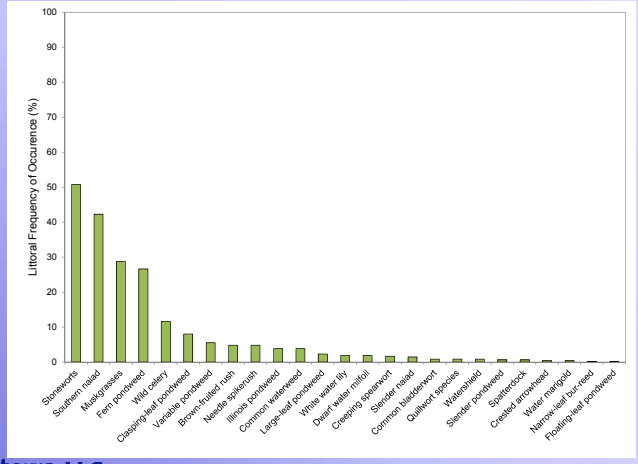




Growth Form	Scientific Name	Common Name	Coeffecient of Conservatism (C)	2010 (WDNR)	2014 (Onterra)
Emergent	*Calamagrostis canadensis*	Blue-joint grass	5		I
	Calla palustris	Water arum	9		I
	Carex comosa	Bristly sedge	5		I
	Dulichium arundinaceum	Three-way sedge	9		I
	Eleocharis palustris	Creeping spikerush	6		I
	Iris pseudacorus	Pale-yellow iris	Exotic		I
	Iris versicolor	Northern blue flag	5		I
	Juncus effusus	Soft rush	4		I
	Schoenoplectus tabernaemontani	Softstem bulrush	4		I
	Scirpus cyperinus	Wool grass	4		I
FL	*Brasenia schreberi*	Watershield	7	X	X
	Nuphar variegata	Spatterdock	6	I	X
	Nymphaea odorata	White water lily	6	X	X
FL/E	*Sparganium angustifolium*	Narrow-leaf bur-reed	9		X
	Sparganium sp.	Bur-reed sp.	N/A	I	
Submergent	*Bidens beckii*	Water marigold	8	X	X
	Chara spp.	Muskgrasses	7	X	X
	Elodea canadensis	Common waterweed	3	X	X
	Eriocaulon aquaticum	Pipewort	9	X	I
	Isoetes spp.	Quillwort species	8		X
	Myriophyllum spicatum	Eurasian water milfoil	Exotic	I	I
	Myriophyllum tenellum	Dwarf water milfoil	10	X	X
	Najas flexilis	Slender naiad	6		X
	Najas guadalupensis	Southern naiad	7	X	X
	Nitella spp.	Stonewort spp.	7	X	X
	Potamogeton amplifolius	Large-leaf pondweed	7	X	X
	Potamogeton berchtoldii	Slender pondweed	7	X	X
	Potamogeton foliosus	Leafy pondweed	6	X	
	Potamogeton gramineus	Variable pondweed	7	X	X
	Potamogeton illinoensis	Illinois pondweed	6	X	X
	Potamogeton natans	Floating-leaf pondweed	5	I	X
	Potamogeton praelongus	White-stem pondweed	8	X	
	Potamogeton richardsonii	Clasping-leaf pondweed	5	X	X
	Potamogeton robbinsii	Fern pondweed	8	X	X
	Ranunculus flammula	Creeping spearwort	9	X	X
	Utricularia vulgaris	Common bladderwort	7		X
	Vallisneria americana	Wild celery	6	X	X
S/E	*Eleocharis acicularis*	Needle spikerush	5	X	X
	Juncus pelocarpus f. submersus	Brown-fruited rush	8	X	X
	Sagittaria sp. (rosette)	Arrowhead sp. (rosette)	N/A	X	
	Sagittaria cristata	Crested arrowhead	9		X
	Sagittaria cuneata	Arum-leaved arrowhead	7		I
FF	*Lemna minor*	Lesser duckweed	5	X	I

FL = Floating-leaf; FL/E = Floating-leaf & Emergent; S/E = Submergent & Emergent; FF = Free-floating
X = Present on rake during point-intercept survey; I = Incidentally located

2014 Littoral Frequency of Occurrence



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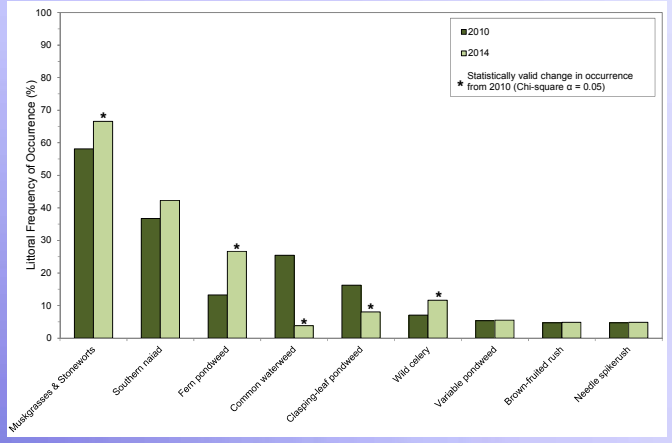
2010 & 2014 Littoral Frequency of Occurrence



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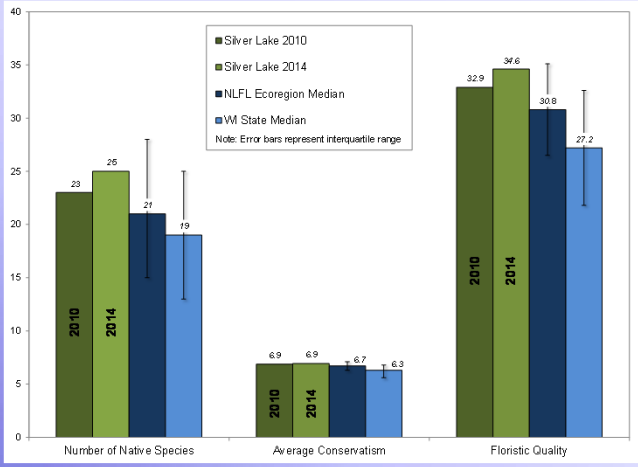
Floristic Quality Analysis



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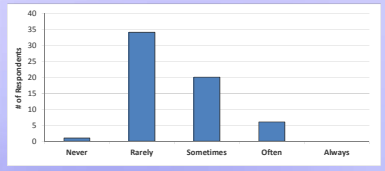
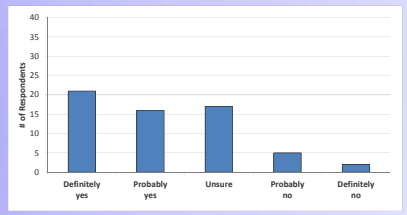
Stakeholder Survey – Aquatic Plants and Algae

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



Considering your answer to the question above, do you believe aquatic plant control is needed on Silver Lake?



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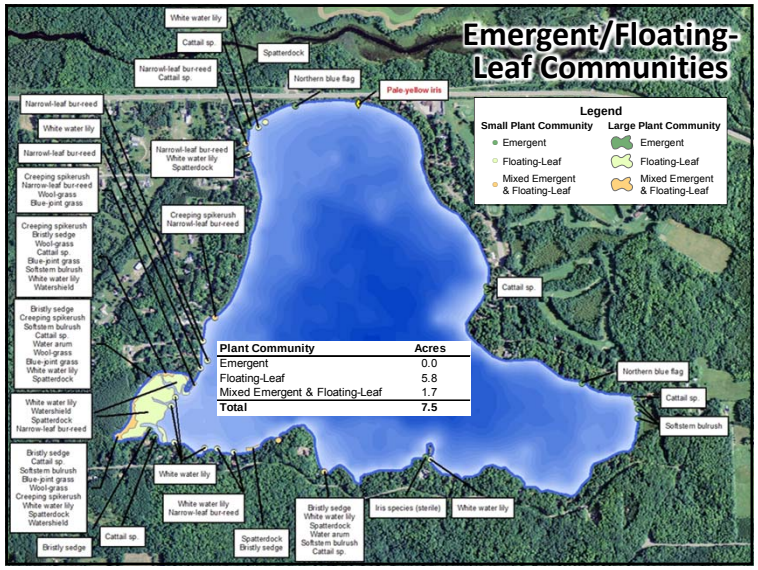

General Fishery

- Silver Lake is currently managed by the WDNR as a panfish, bass, northern pike, and muskellunge fishery.
- Panfish, bass, pike reproduce naturally
- Walleye and muskellunge are not self-sustaining – actively managed through stocking

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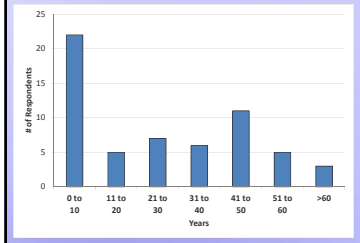
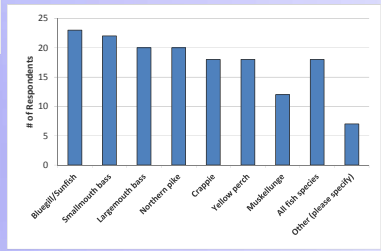
Stakeholder Survey – Silver Lake Fishery

For how many years have you fished Silver Lake?



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



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Native American Spear Harvest

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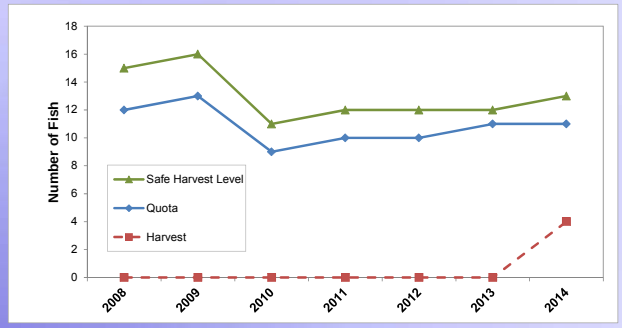
Native American Spear Harvest

Walleye Spear Harvest



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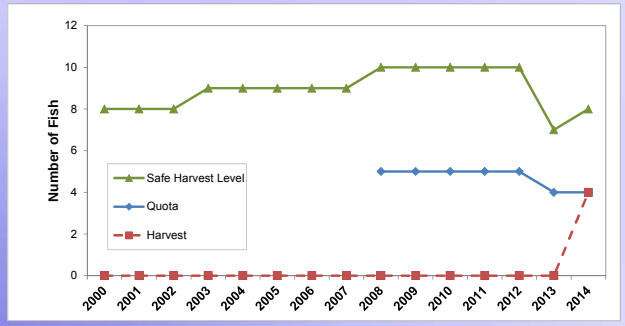
Native American Spear Harvest

Muskellunge Spear Harvest



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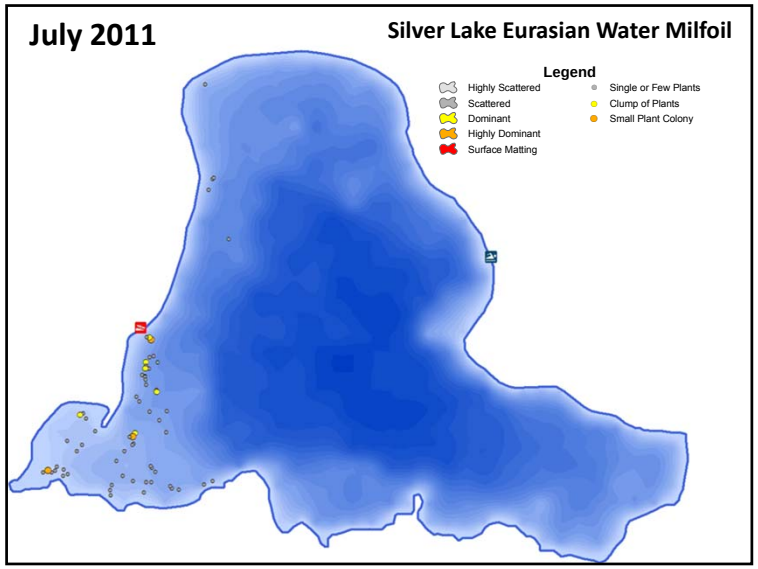
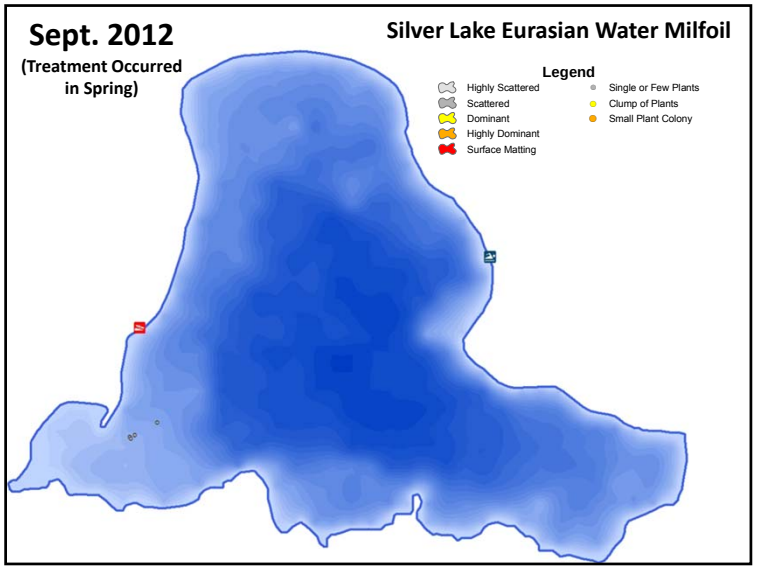
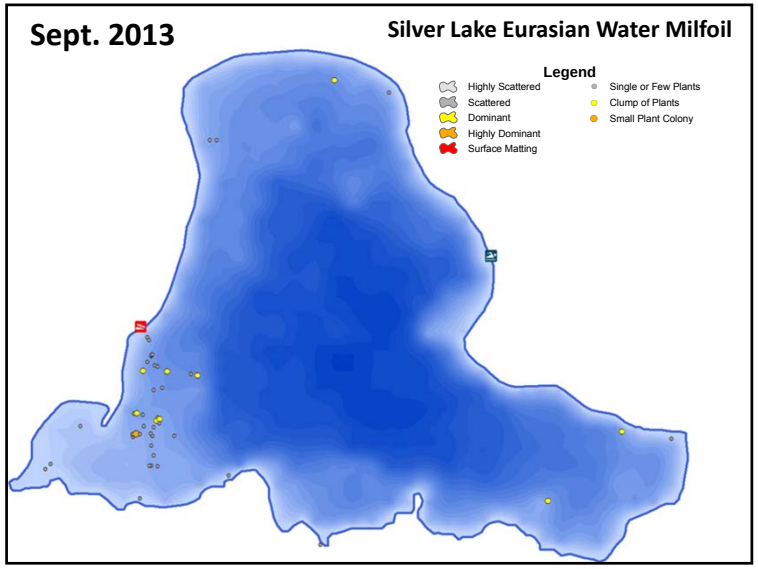
Non-Native Aquatic Plants

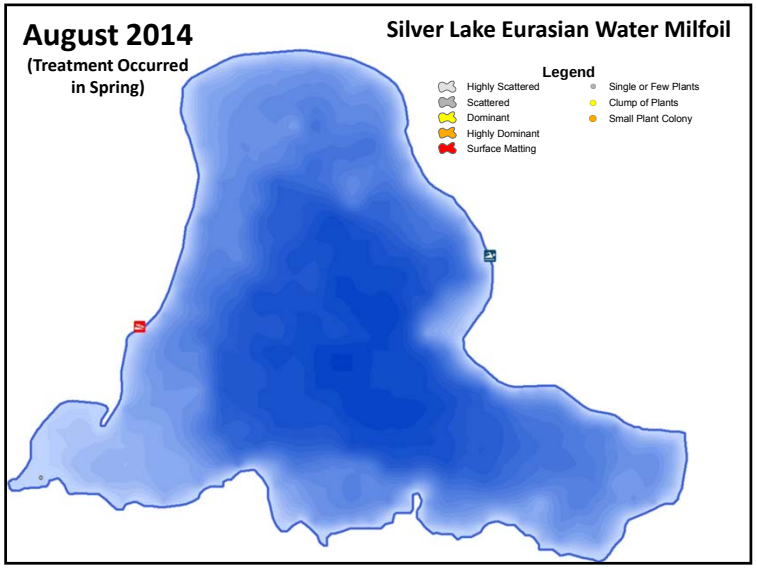
Eurasian water milfoil

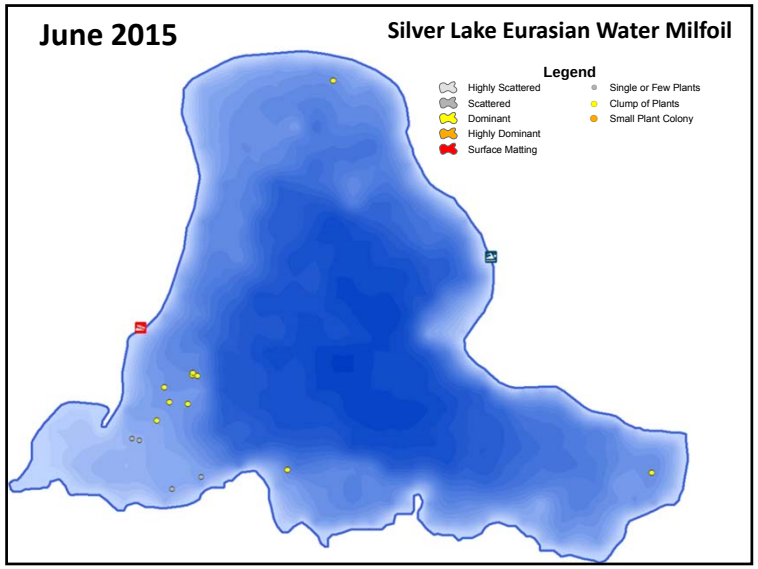
- First documented in Silver Lake in 2010
- Onterra first mapped EWM in July of 2011
- Herbicide treatments occurred in spring of 2012 and 2014
- Volunteer hand-harvesting
- Not recorded during 2014 PI survey; indicates very low abundance


July 2011
Silver Lake Eurasian Water Milfoil
Legend
Highly Scattered
Scattered
Dominant
Highly Dominant
Surface Matting
Single or Few Plants
Clump of Plants
Small Plant Colony


Sept. 2012
(Treatment Occurred in Spring)
Silver Lake Eurasian Water Milfoil
Legend
Highly Scattered
Scattered
Dominant
Highly Dominant
Surface Matting
Single or Few Plants
Clump of Plants
Small Plant Colony


Sept. 2013
Silver Lake Eurasian Water Milfoil
Legend
Highly Scattered
Scattered
Dominant
Highly Dominant
Surface Matting
Single or Few Plants
Clump of Plants
Small Plant Colony


August 2014
(Treatment Occurred in Spring)
Silver Lake Eurasian Water Milfoil
Legend
Highly Scattered
Scattered
Dominant
Highly Dominant
Surface Matting
Single or Few Plants
Clump of Plants
Small Plant Colony



Herbicide Control 101

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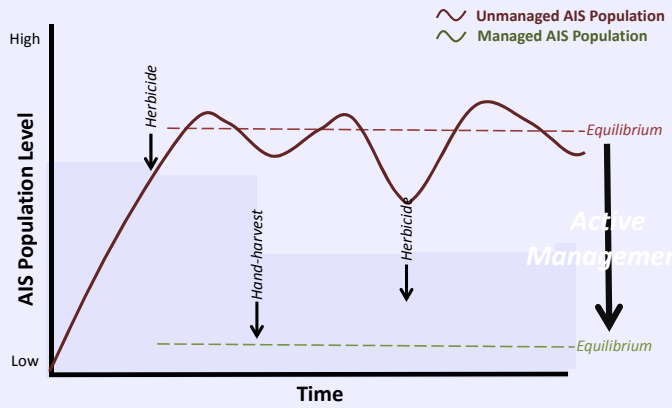
Active Management Discussion

Pros	Cons
• Keep AIS population low so native ecosystem can function as it did prior to AIS	• Management action itself may be ecological damaging to the lake, either through improper implementation or unintended/unknown impacts
• Keep AIS population low so the lake is not a source population for other nearby lakes	• Management action may not be fully supported by public
• Keep AIS population low so does not cause recreational, navigational, or aesthetic issues	• Equilibrium ***Unmanaged*** AIS population may be low enough to not cause large ecosystem or user conflicts

Hypothetical EWM Populations



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How do they work?

- **2,4-D –** absorbed by plant tissue; inhibits plant growth and cell division (auxin hormone mimic)
- **Triclopyr –** absorbed by plant tissue; inhibits plant growth and cell division (auxin hormone mimic)
- **Endothall –** commonly referred to as a contact herbicide, inhibits respiration and protein synthesis, disrupts cell membranes
- **Fluridone –** inhibits plant-specific enzyme (carotene) which protects chlorophyll from UV (sun) damage
- **Diquat –** Inhibits photosynthesis & destroys cell membranes

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Are herbicides "safe?"

Registration by the EPA does not mean that the use of the herbicide poses no risk to humans or the environment, only that the benefits have been determined to outweigh the risks.

Because product use is not without risk, the EPA does not define any pesticide as "safe."

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Early-season Herbicide Control Strategy

Exotic species are small, actively growing, and most vulnerable

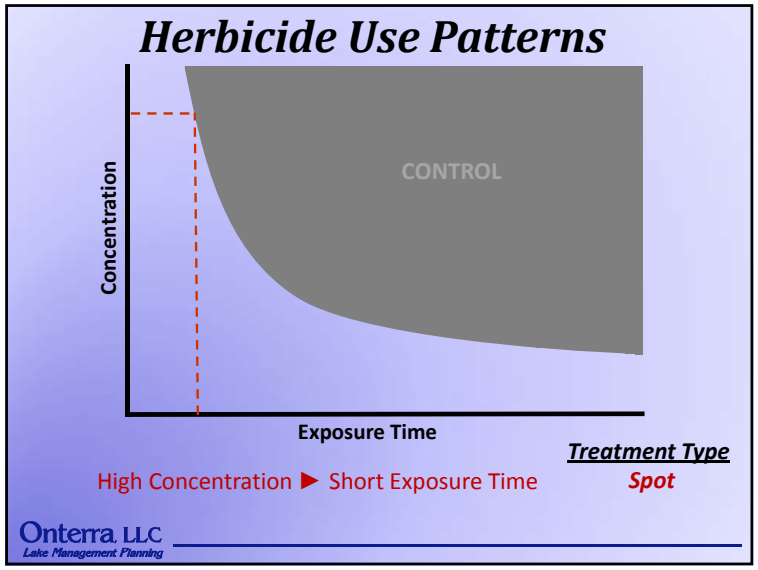
Many native species are dormant

Cool water temperatures result in slower microbial degradation

Minimize biomass decomposition

Herbicide Use Patterns

- **Dissipation: horizontal and vertical movement of herbicide within the water column**
  - Water flow
  - Wind
  - Treatment area relative to lake
  - Water depth
- **Degradation: physical breakdown of herbicide into inert components**
  - Microbial
  - Photolytic


Herbicide Use Patterns
CONTROL
Concentration
Exposure Time
Treatment Type
Spot
High Concentration ► Short Exposure Time
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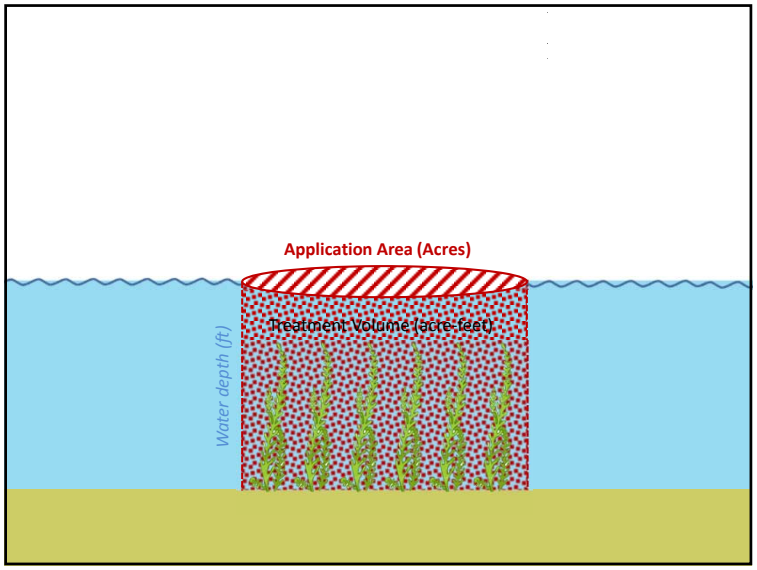
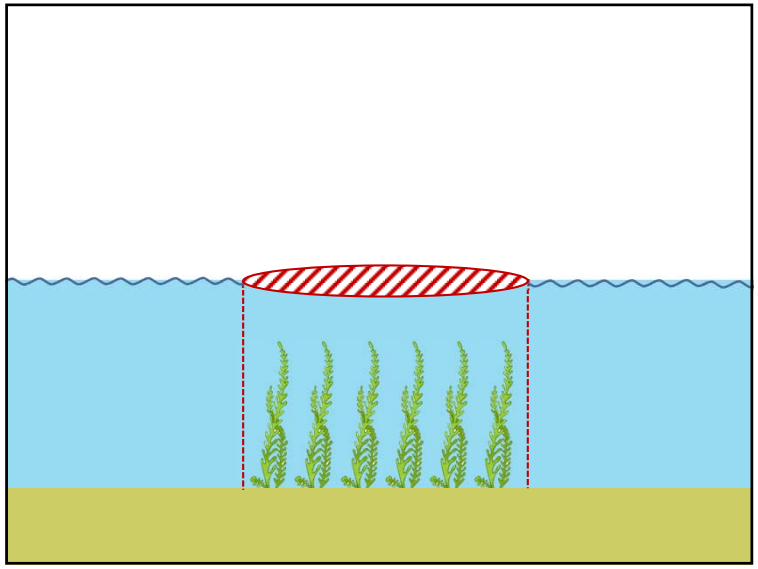
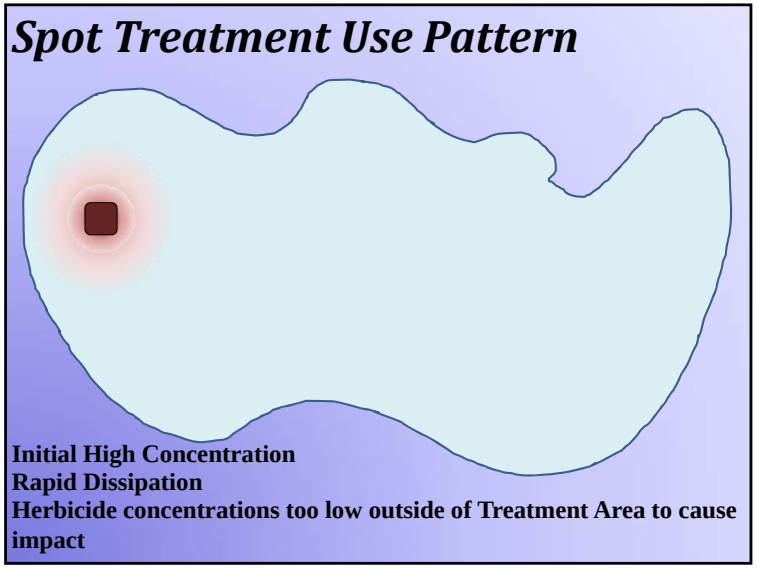

Application Area (Acres)
Treatment Volume (acre-feet)
Water depth (ft)

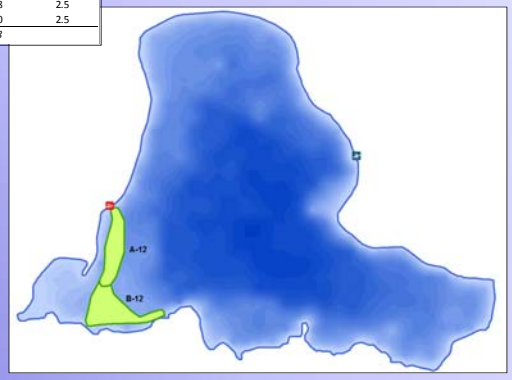



Spot Treatment Use Pattern
Initial High Concentration
Rapid Dissipation
Herbicide concentrations too low outside of Treatment Area to cause impact

2012 Spot Treatment

2012 Final Treatment Areas
Granular 2,4-D

Site	Final Acres	Ave. Depth (feet)	Volume (ac-ft)	PPM a.e. 2,4-D
A-12	4.4	7.0	30.8	2.5
B-12	6.0	5.5	33.0	2.5
Total	*10.4*		*63.8*	



2014 Spot Treatment

2014 Final EWM Treatment Areas
Granular 2,4-D

Site	Proposed Acres	Final Acres	Ave. Depth (feet)	Volume (ac-ft)	2,4-D PPM ae
A-14	6.6	8.4	8.0	67.2	3.50
Total	6.6	8.4		67.2	

Lake-wide 2,4-D concentration if complete dissipation occurs: 0.060 ppm ae

Factors that Result in Increased CET for Spot Treatments

Large Treatment Sites
- Especially over 5 acres

Broad-shaped Sites
- Long, skinny shapes act like small sites

Physical Barriers
- Dilution doesn't occur in all directions
- Eddy effects

Low Water Exchange
- Flow
- Wave-action

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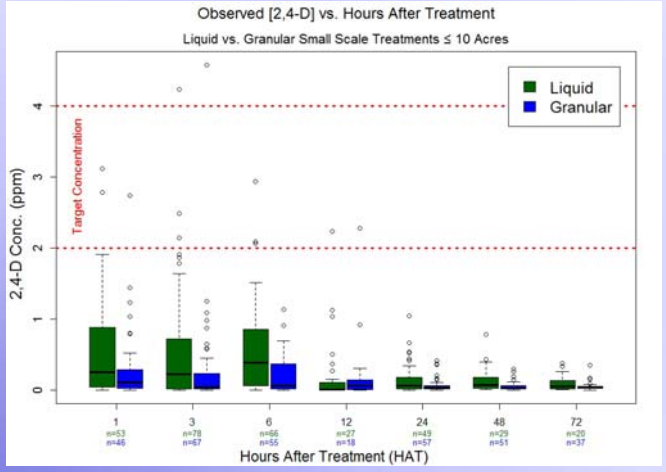

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AIS-Early Detection & Response Project

- Target new EWM population with hand-harvesting & herbicide treatments if warranted
  - Volunteer & professional efforts
  - Monitor before and after to enhance effectiveness
- AIS-EDR Project ended after 2014 season
  - Management planning project will objectively review AIS-EDR project, outline future goals, actions, triggers

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Conclusions

- Water quality in Silver Lake is Excellent
  - Phosphorus concentrations are low
  - Algal abundance is low
  - Water clarity is high
- Overall, watershed is in excellent shape
  - Majority is comprised of natural land cover (forests)
  - Modeling indicates no unaccounted sources of phosphorus entering the lake
- Shoreline Condition
  - >50% close to or is completely natural
  - 20% is highly developed

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Conclusions

- Aquatic Plant Community
  - Standard analysis indicates native community is of high quality
  - EWM occurrence remains low
- Fisheries
  - Panfish & Bass are naturally reproducing
  - Walleye & Muskellunge require stocking
  - Native American spearharvest of walleye and muskellunge has been below safe-harvest levels

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Thank You
Many of the graphics used in this presentation were supplied by:
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Lakes
Partnership
UW
Extension
WISCONSIN
DEPT. OF NATURAL RESOURCES
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Lake Management Planning

B

APPENDIX B

Stakeholder Survey Response Charts and Comments

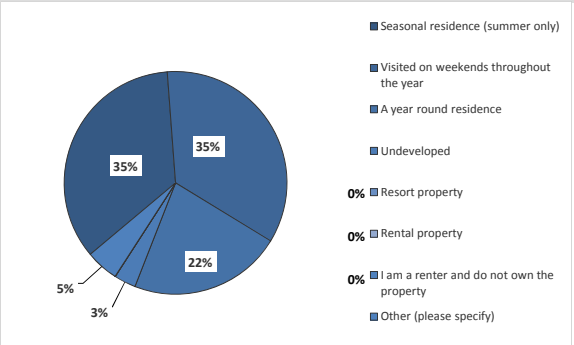
Silver Lake - Anonymous Stakeholder Survey

Surveys Distributed: 187
Surveys Returned: 63
Response Rate: 34%

Silver Lake Property

1. How is your property on or near Silver Lake utilized?

Answer Options	Response Percent	Response Count
Seasonal residence (summer only)	34.9%	22
Visited on weekends throughout the year	34.9%	22
A year round residence	22.2%	14
Undeveloped	3.2%	2
Resort property	0.0%	0
Rental property	0.0%	0
I am a renter and do not own the property	0.0%	0
Other (please specify)	4.8%	3
answered question		63
skipped question		0

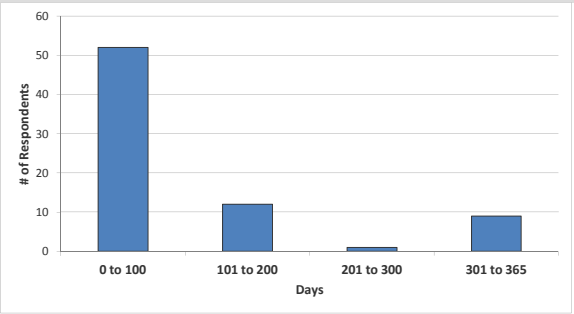


Number	Other (please specify)
1	Our cabin is across the road from the lake that we use year round. Used primarily on weekends, but we spend a few weeks there every year as well
2	seasonal - april thru October
3	summer residence but some visits in the winter

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

Answer Options	Response Count
	61
answered question	61
skipped question	2

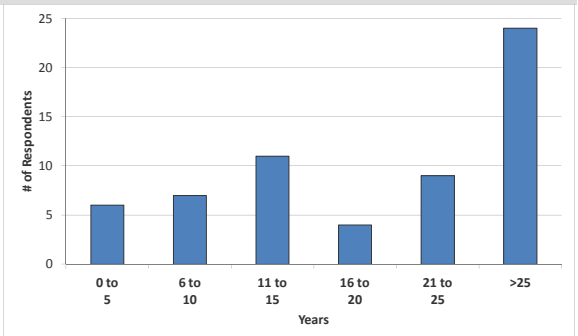
Category (# of days)	Responses	
0 to 100	40	66%
101 to 200	8	13%
201 to 300	3	5%
301 to 365	10	16%



3. How long have you owned or rented your property on Silver Lake?

Answer Options	Response Count
	61
answered question	61
skipped question	2

Category (# of years)	Responses	% Response
0 to 5	6	10%
6 to 10	7	11%
11 to 15	11	18%
16 to 20	4	7%
21 to 25	9	15%
>25	24	39%

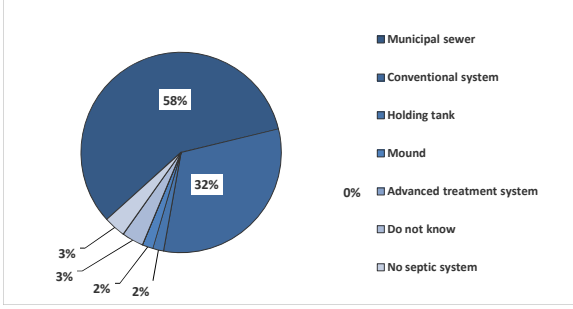


4. Is your property located on the shoreline of Silver Lake (lakefront property), or not located on the lake's shoreline?

Answer Options	Response Percent	Response Count
Lakefront property	91.9%	57
Not lakefront property	8.1%	5
answered question		62
skipped question		1

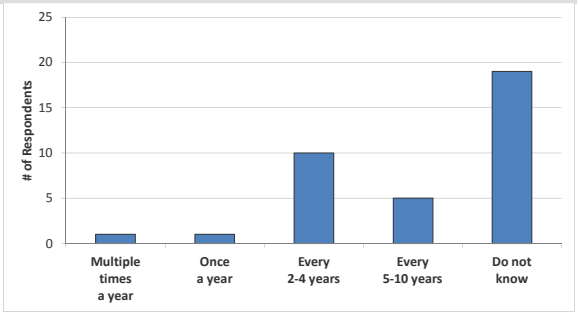
5. What type of septic system does your property utilize?

Answer Options	Response Percent	Response Count
Municipal sewer	57.9%	33
Conventional system	31.6%	18
Holding tank	1.8%	1
Mound	1.8%	1
Advanced treatment system	0.0%	0
Do not know	3.5%	2
No septic system	3.5%	2
answered question		57
skipped question		6



6. How often is the septic system on your property pumped?

Answer Options	Response Percent	Response Count
Multiple times a year	2.8%	1
Once a year	2.8%	1
Every 2-4 years	27.8%	10
Every 5-10 years	13.9%	5
Do not know	52.8%	19
answered question		36
skipped question		27

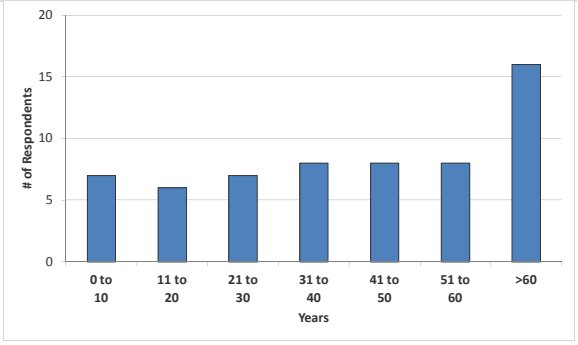


Recreational Activity on Silver Lake

7. How many years ago did you first visit Silver Lake?

Answer Options	Response Count
	60
answered question	60
skipped question	3

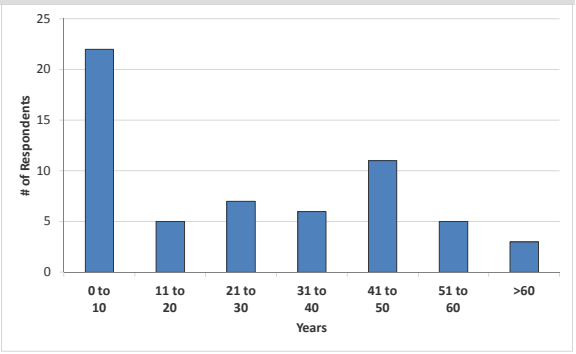
Category (# of days)	Responses	% Response
0 to 10	**7**	**12%**
11 to 20	**6**	**10%**
21 to 30	**7**	**12%**
31 to 40	**8**	**13%**
41 to 50	**8**	**13%**
51 to 60	**8**	**13%**
>60	**16**	**27%**



8. For how many years have you fished Silver Lake?

Answer Options	Response Count
	59
answered question	59
skipped question	4

Category (# of years)	Responses	% Response
0 to 10	22	37%
11 to 20	5	8%
21 to 30	7	12%
31 to 40	6	10%
41 to 50	11	19%
51 to 60	5	8%
>60	3	5%

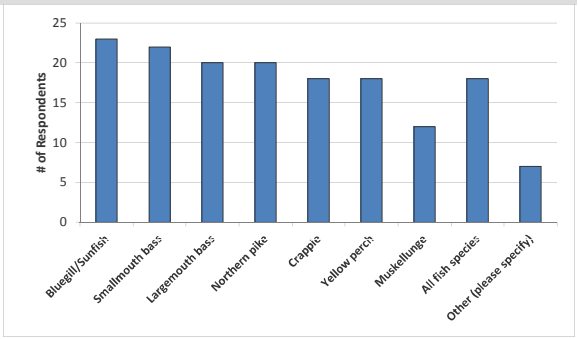


9. Have you personally fished on Silver Lake in the past three years?

Answer Options	Response Percent	Response Count
Yes	67.8%	40
No	32.2%	19
answered question		59
skipped question		4

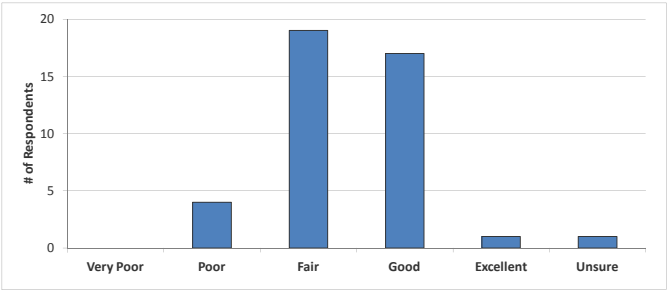
10. What species of fish do you like to catch on Silver Lake?

Answer Options	Response Percent	Response Count
Bluegill/Sunfish	54.8%	23
Smallmouth bass	52.4%	22
Largemouth bass	47.6%	20
Northern pike	47.6%	20
Crappie	42.9%	18
Yellow perch	42.9%	18
Muskellunge	28.6%	12
All fish species	42.9%	18
Other (please specify)	16.7%	7
answered question		42
skipped question		21



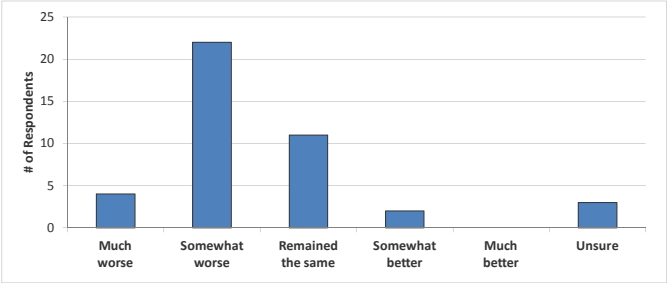
11. How would you describe the current quality of fishing on Silver Lake?

Answer Options	Very Poor	Poor	Fair	Good	Excellent	Unsure	Response Count
	0	4	19	17	1	1	42
answered question							42
skipped question							21



12. How has the quality of fishing changed on Silver Lake since you have started fishing the lake?

Answer Options	Much worse	Somewhat worse	Remained the same	Somewhat better	Much better	Unsure	Response Count
	4	22	11	2	0	3	42
						answered question	42
						skipped question	21



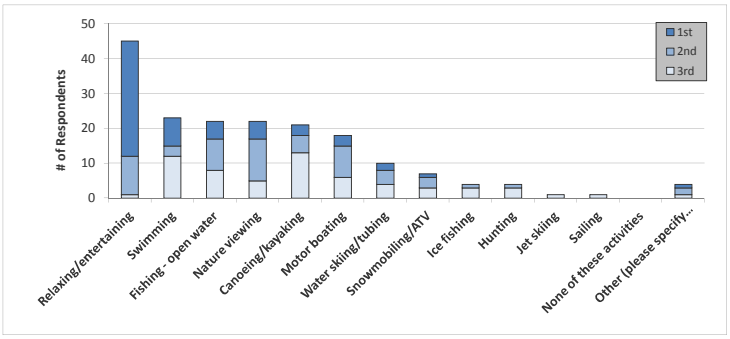
13. What types of watercraft do you currently use on Silver Lake?

Answer Options	Response Percent	Response Count
Canoe/kayak	67.2%	41
Motor boat with greater than 25 hp motor	50.8%	31
Rowboat	34.4%	21
Pontoon	34.4%	21
Paddleboat	19.7%	12
Motor boat with 25 hp or less motor	16.4%	10
Sailboat	13.1%	8
Jet ski (personal water craft)	11.5%	7
Jet boat	0.0%	0
Do not use watercraft	1.6%	1
answered question		61
skipped question		2

14. For the list below, rank your top three activities that are important reasons for owning or renting your property on or near Silver Lake, with 1 being the most important activity.

Answer Options	1st	2nd	3rd	Rating Average	Response Count
Relaxing/entertaining	33	11	1	1.29	45
Swimming	8	3	12	2.17	23
Fishing - open water	5	9	8	2.14	22
Nature viewing	5	12	5	2.00	22
Canoeing/kayaking	3	5	13	2.48	21
Motor boating	3	9	6	2.17	18
Water skiing/tubing	2	4	4	2.20	10
Snowmobiling/ATV	1	3	3	2.29	7
Ice fishing	0	1	3	2.75	4
Hunting	0	1	3	2.75	4
Jet skiing	0	0	1	3.00	1
Sailing	0	0	1	3.00	1
None of these activities	0	0	0	0.00	0
Other (please specify below)	1	2	1	2.00	4
			answered question		62
			skipped question		1

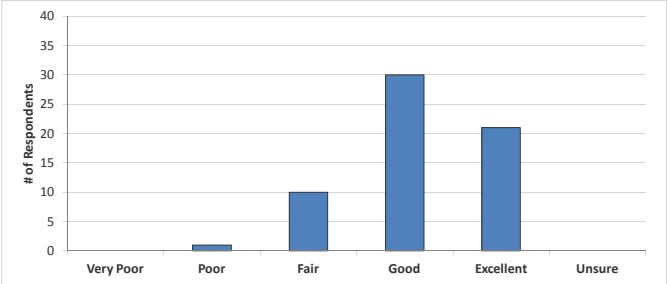
Number	"Other" responses
1	golfing
2	Family is from Laona
3	Enjoying quite nights
4	pontooning
5	Golf



Silver Lake Current and Historic Condition, Health and Management

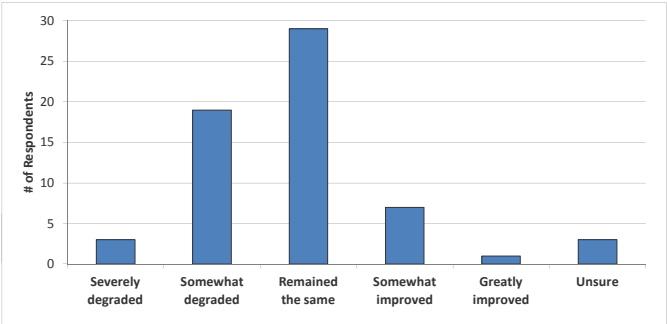
15. How would you describe the current water quality of Silver Lake?

Answer Options	Very Poor	Poor	Fair	Good	Excellent	Unsure	Response Count
	0	1	10	30	21	0	62
						answered question	**62**
						skipped question	**1**



16. How has the current water quality changed in Silver Lake since you first visited the lake?

Answer Options	Severely degraded	Somewhat degraded	Remained the same	Somewhat improved	Greatly improved	Unsure	Response Count
	3	19	29	7	1	3	62
						answered question	**62**
						skipped question	**1**



17. Before reading the statement above, had you ever heard of aquatic invasive species?

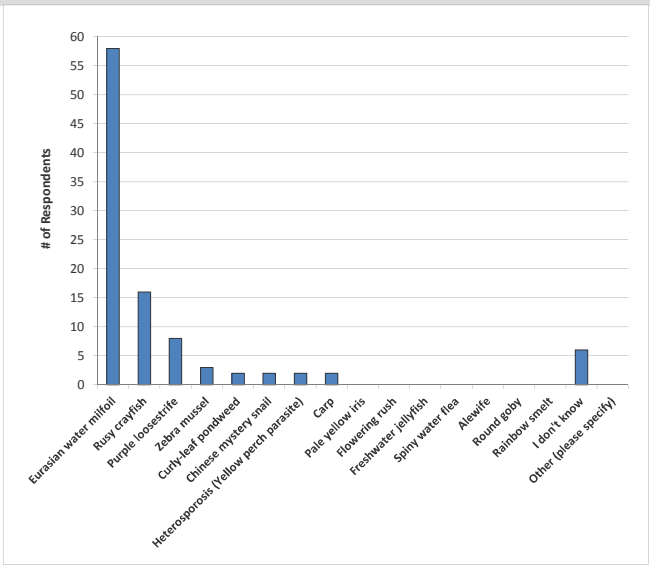
Answer Options	Response Percent	Response Count
Yes	100.0%	62
No	0.0%	0
answered question		**62**
skipped question		**1**

18. Do you believe aquatic invasive species are present within Silver Lake?

Answer Options	Response Percent	Response Count
Yes	100.0%	62
No	0.0%	0
answered question		**62**
skipped question		**1**

19. Which aquatic invasive species do you believe are in Silver Lake?

Answer Options	Response Percent	Response Count
Eurasian water milfoil	93.5%	58
Rusy crayfish	25.8%	16
Purple loosestrife	12.9%	8
Zebra mussel	4.8%	3
Curly-leaf pondweed	3.2%	2
Chinese mystery snail	3.2%	2
Heterosporosis (Yellow perch parasite)	3.2%	2
Carp	3.2%	2
Pale yellow iris	0.0%	0
Flowering rush	0.0%	0
Freshwater jellyfish	0.0%	0
Spiny water flea	0.0%	0
Alewife	0.0%	0
Round goby	0.0%	0
Rainbow smelt	0.0%	0
I don't know	9.7%	6
Other (please specify)	0.0%	0
answered question		62
skipped question		1



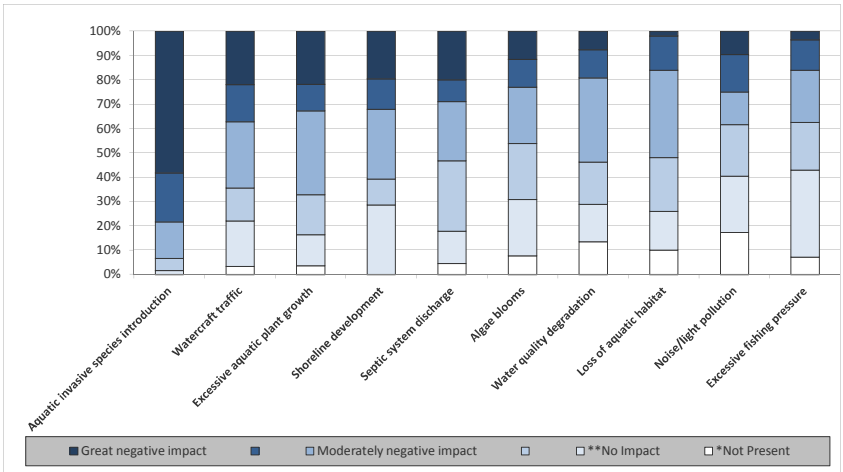
20. To what level do you believe each of the following factors may currently be negatively impacting Silver Lake?

* Not Present means that you believe the issue does not exist on Silver Lake.

** No Impact means that the issue may exist on Silver Lake but it is not negatively impacting the lake.

Answer Options	*Not Present	**No Impact		Moderately negative impact		Great negative impact	Unsure: Need more informatio	Rating Average	Response Count
Aquatic invasive species introduction	0	1	3	9	12	35	1	3.23	61
Watercraft traffic	2	11	8	16	9	13	1	1.98	60
Excessive aquatic plant growth	2	7	9	19	6	12	2	1.98	57
Shoreline development	0	16	6	16	7	11	2	1.78	58
Septic system discharge	2	6	13	11	4	9	13	1.43	58
Algae blooms	4	12	12	12	6	6	5	1.37	57
Water quality degradation	7	8	9	18	6	4	6	1.36	58
Loss of aquatic habitat	5	8	11	18	7	1	6	1.29	56
Noise/light pollution	9	12	11	7	8	5	3	1.25	55
Excessive fishing pressure	4	20	11	12	7	2	3	1.08	59
Other (please specify)									3
								answered question	61
								skipped question	2

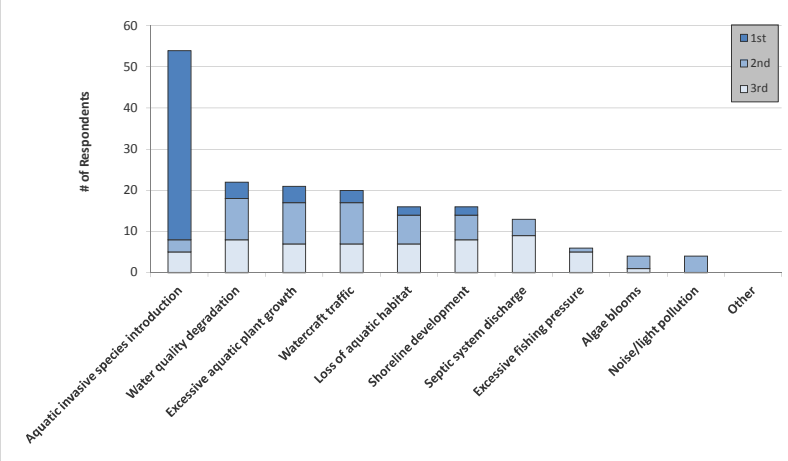
Number	Other (please specify)
1	Indian Spearing of fish great negative impact
2	jet skis
3	no wake time should start later in evening, 6pm too early



21. From the list below, please rank your top three concerns regarding Silver Lake, with 1 being your greatest concern.

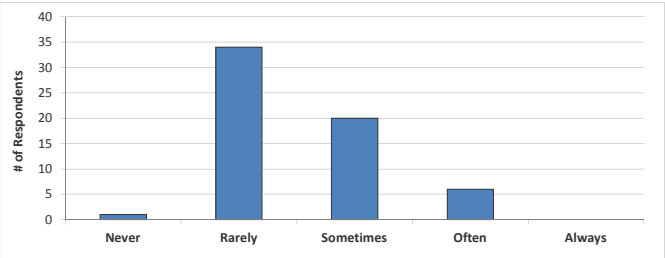
Answer Options	1st	2nd	3rd	Response Count
Aquatic invasive species introduction	46	3	5	54
Water quality degradation	4	10	8	22
Watercraft traffic	4	10	7	21
Shoreline development	3	10	7	20
Excessive aquatic plant growth	2	7	7	16
Septic system discharge	2	6	8	16
Loss of aquatic habitat	0	4	9	13
Noise/light pollution	0	1	5	6
Excessive fishing pressure	0	3	1	4
Algae blooms	0	4	0	4
Other (please specify)	0	0	0	0
			answered question	**61**
			skipped question	**2**

Number	"Other" responses
1	enforcement of speeding hours



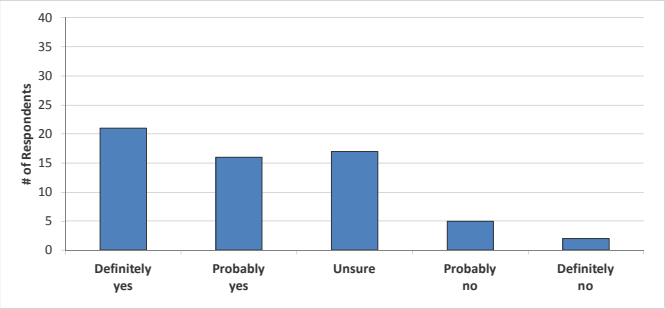
22. During open water season how often does aquatic plant growth, including algae, negatively impact your enjoyment of Silver Lake?

Answer Options	Never	Rarely	Sometimes	Often	Always	Response Count
	1	34	20	6	0	61
				answered question		**61**
				skipped question		**2**



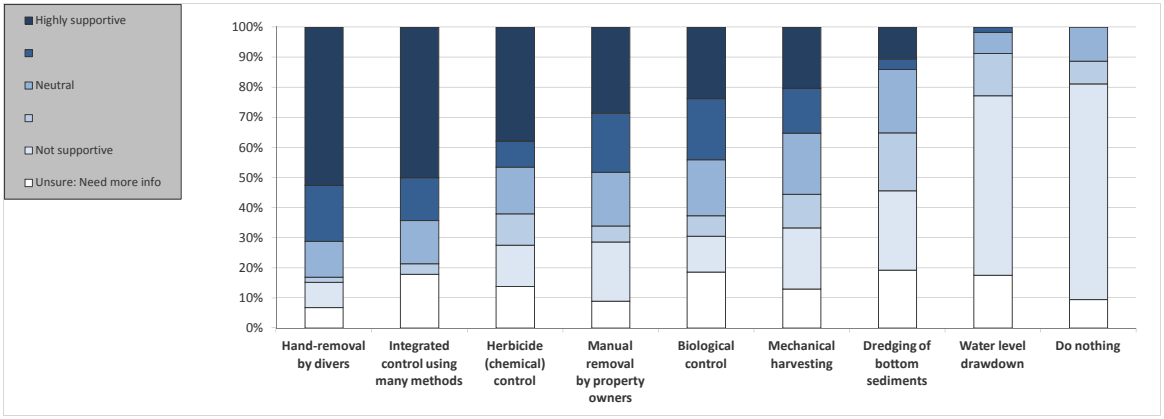
23. Considering your answer to the question above, do you believe aquatic plant control is needed on Silver Lake?

Answer Options	Definitely yes	Probably yes	Unsure	Probably no	Definitely no	Response Count
	21	16	17	5	2	61
					answered question	61
					skipped question	2



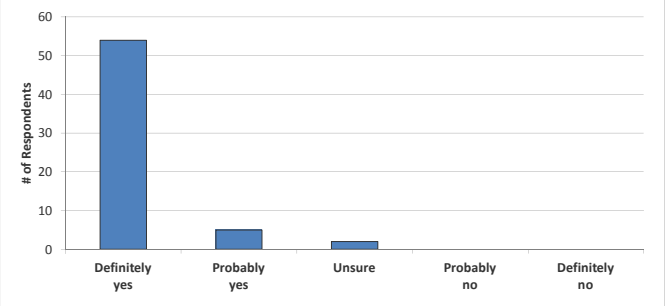
24. Native aquatic plants can be managed using many techniques. What is your level of support for the responsible use of the following techniques on Silver Lake?

Answer Options	Not supportive		Neutral		Highly supportive	Unsure: Need more info	Rating Average	Response Count
Hand-removal by divers	5	1	7	11	31	4	2.78	59
Integrated control using many methods	0	2	8	8	28	10	2.50	56
Herbicide (chemical) control	8	6	9	5	22	8	2.12	58
Manual removal by property owners	11	3	10	11	16	5	2.04	56
Biological control	7	4	11	12	14	11	1.81	59
Mechanical harvesting	11	6	11	8	11	7	1.69	54
Dredging of bottom sediments	15	11	12	2	6	11	1.18	57
Water level drawdown	34	8	4	1	0	10	0.93	57
Do nothing (do not manage plants)	38	4	6	0	0	5	0.87	53
						answered question		60
						skipped question		3



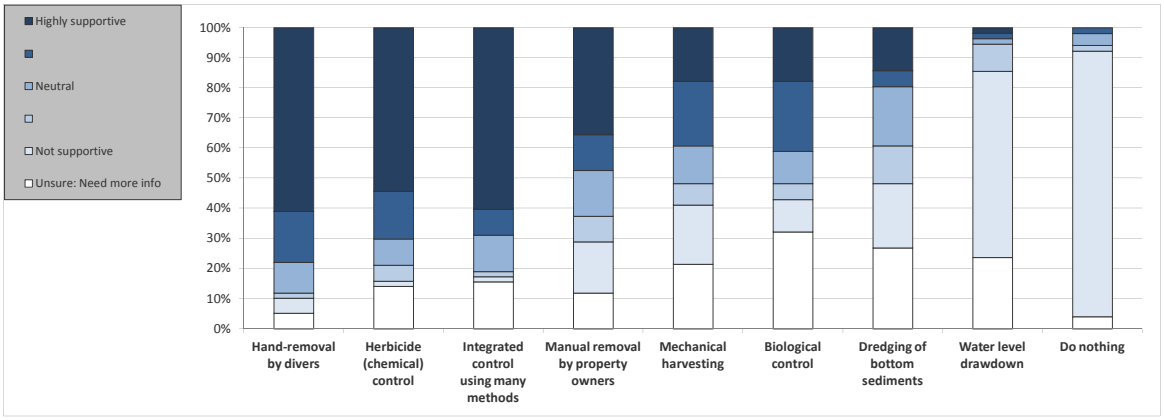
25. Eurasian water milfoil, an aquatic invasive plant, is known to be present in a relatively small population within Silver Lake. Do you believe Eurasian water milfoilf control is needed on Silver Lake?

Answer Options	Definitely yes	Probably yes	Unsure	Probably no	Definitely no	Response Count
	54	5	2	0	0	61
					answered question	61
					skipped question	2



26. Eurasian water milfoil can be managed using many techniques. What is your level of support for the responsible use of the following techniques on Silver Lake?

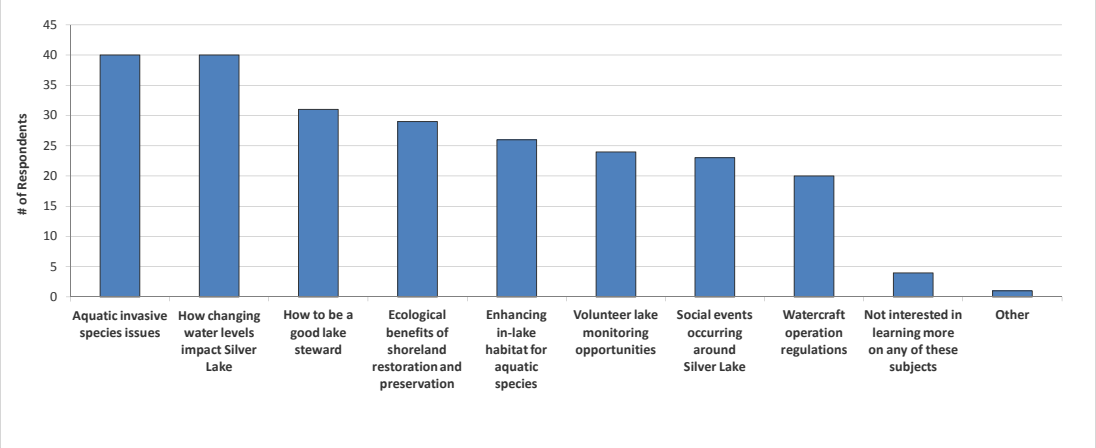
Answer Options	Not supportive		Neutral		Highly supportive	Unsure: Need more info	Rating Average	Response Count
Hand-removal by divers	3	1	6	10	36	3	3.03	59
Herbicide (chemical) control	1	3	5	9	31	8	2.77	58
Integrated control using many methods	1	1	7	5	35	9	2.72	56
Manual removal by property owners	10	5	9	7	21	7	2.12	56
Mechanical harvesting	11	4	7	12	10	12	1.70	54
Biological control	6	3	6	13	10	18	1.63	59
Dredging of bottom sediments	12	7	11	3	8	15	1.20	57
Water level drawdown	34	5	1	1	1	13	0.93	57
Do nothing (do not manage plants)	45	1	2	1	0	2	0.98	53
						answered question		60
						skipped question		3



27. Stakeholder education is an important component of every lake management planning effort. Which of these subjects would you like to learn more about?

Answer Options	Response Percent	Response Count
Aquatic invasive species issues	69.0%	40
How changing water levels impact Silver Lake	69.0%	40
How to be a good lake steward	53.4%	31
Ecological benefits of shoreland restoration and preservation	50.0%	29
Enhancing in-lake habitat for aquatic species	44.8%	26
Volunteer lake monitoring opportunities	41.4%	24
Social events occurring around Silver Lake	39.7%	23
Watercraft operation regulations	34.5%	20
Not interested in learning more on any of these subjects	6.9%	4
Other (please specify)	1.7%	1
answered question		58
skipped question		5

Number	Other (please specify)
1	state regulations regarding shoreline alterations - penalities involved - who can these be reported to



Forest County Silver Lake Association (FCSLA)

28. Before receiving this mailing, have you ever heard of the FCSLA?

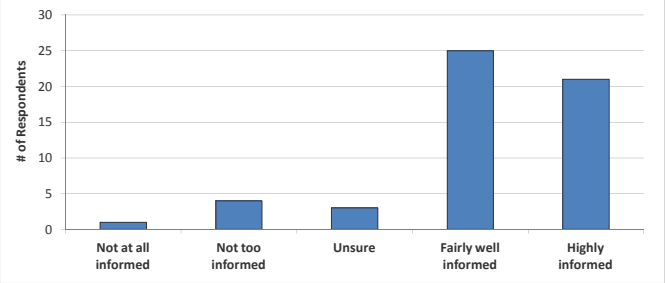
Answer Options	Response Percent	Response Count
Yes	98.3%	59
No	1.7%	1
answered question		60
skipped question		3

29. What is your membership status with the FCSLA?

Answer Options	Response Percent	Response Count
Current member	91.4%	53
Former member	1.7%	1
Never been a member	6.9%	4
answered question		58
skipped question		5

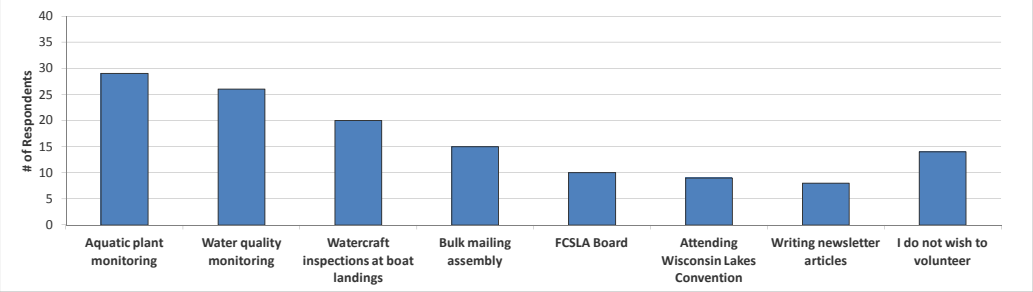
30. How informed is or was the FCSLA keeping you regarding issues with Silver Lake and its management?

Answer Options	Not at all informed	Not too informed	Unsure	Fairly well informed	Highly informed	Response Count
	1	4	3	25	21	54
answered question						54
skipped question						9



31. The effective management of your lake will require the cooperative efforts of numerous volunteers. Please circle the activities you would be willing to participate in if the FRCSLA requires additional assistance.

Answer Options	Response Percent	Response Count
Aquatic plant monitoring	49.2%	29
Water quality monitoring	44.1%	26
Watercraft inspections at boat landings	33.9%	20
Bulk mailing assembly	25.4%	15
FCSLA Board	16.9%	10
Attending Wisconsin Lakes Convention	15.3%	9
Writing newsletter articles	13.6%	8
I do not wish to volunteer	23.7%	14
answered question		59
skipped question		4



32. Please feel free to provide written comments concerning the Silver Lake, its current and/or historic condition and its management.

Answer Options	Response
	23
answered question	**23**
skipped question	**40**

Number	Response Text
1	Have you considered future mailings asking for comments on the question "If the quality of the lake water decreses are you concerened about the value of your poperty decreasing also?"
2	I firmly believe there should have been some questions included in this survey regarding the effects of lake properties owners using fertilizers on their big green lawns. If you don't think the run-off from these fertilizers is affecting th health of the lake you are terribly mistaken. In addition, I believe some lake property owners are taking liberties with state and DNR regulations regarding alterations to the natural shoreline - the places are easy to see from the lake. These individuals are not being penalized or held to state regulations when it comes to altering the shoreline. This too should be a tremendous concern to the SLA - yet it was not really addressed by this survey. Why?
3	Silver Lake has "aged" in several wasy over the last 60+ years, but it still maintains much of it snatural beauty and earlier water quaility. This is becoming more difficult to preserve. Preservation needs a well thought out and managed plan now, supported by all the lake poperty owners and residents.
4	People are trying to do their best to control the Eurasion Milfoil infestation in Silver Lake, but more help is needed
5	Please keep up the work on Milfoil!
6	The run off of pesticides & herbicides needs to be addressed. Also the issue of reckless use of skidoos & ski boats too close to shore . Education in these areas would be welcomed.
7	My 65 years of experience in and around Silver Lake is enhanced by my extended family's presence at Silver Lake since 1922. Furthermore, that is supplemented by the experience of many friends made there over all that time. This historical perspective from all the elder stewards of Silver Lake should be especially regarded, particularly by those presently and formally engaged in the lake's protection and preservation, to inform and instruct future policy and ongoing work.
8	Would like to see a limit on motor size like under 90 hp. Better fishing !
9	We appreicate the efforts of people who harvest the milfoil & also organize grants & hiring professionals to help irradicate the EWM from the lake. If another questionaire is ever sent perhaps some questions to lake owners could be included about: 1) Decreased value of thier property if EWM expands. 2) Any suggestion for other or more treatments to get rid of the bad stuff!
10	There are too many high powered water craft operating at speeds which are too great and with too little regard for shoreline impact. The lake is too small for the activity like this which it supports. Further, the use of fireworks by property owners degrades the quality of life for all on the lake. It is obnoxious, worrisome to wildlife and unsafe.
11	The shoreline development has tragically deteriorated over the last few decades and greatly impacts the natural beauty of the lake as well as the ecosystem. The use of motorcraft has often controlled the ways the lake can be enjoyed or not be enjoyed.
12	The property taxes for lakeshore properties are so high that my family has had to sell several places. We have always respected the forested lakeshore, but new buyers may not.
13	Even though we are not in a position to volunteer for the FCSLA programs, we believe that the association is working in the best interest of the property owners to keep the lake one of the best in the area, and we will continue to provide monetary support to ensure the programs are properly funded. Thanks
14	I appreciate all of the hard work that the FCSLA is doing at Silver Lake, especially with the challenge of Eurasian Milfoil. Thank you!
15	I am so excited to see how the Lake Association is trying to keep Silver Lake protected so it can be enjoyed by the next generations.
16	Continue your dedicated work to preserve the beauty and water quality of Silver Lake.
17	All Laona residents need to participate in the preservation of Silver Lake, not just those who own lake property. SIlver Lake is used by all, so all should help maintain its beauty.
18	I think Silver Lake is in overall good condition. Putting city sewer and water around the entire lake would be a great help in keeping the lake healthy. Many more residences have been added and the old ones have been remodeled or added onto which have increased their use.
19	we use the lake 6-7 weekends each summer. the public beach is great. People need to learn that the correct way to traverse the lake while doing watersports is in a counter clockwise rotation. a sign at the landing would help this. also, the no-wake time should be later, like 7pm.
20	Aquatic invasive species in my opinion is by far the most important threat to Silver Lake and must be treated as such. So far we have good people working for solutions on the Milfoil but zebra muscle seem imminent unless we have Boat Landing inspections.
21	The lake and area has not changed that dramatically in the last 40 years. Hope that it continues to stay lovely for generations to enjoy.
22	I believe that there should be more concern with runoff around the lake which is bringing in many unwanted materials into the water. (fertilizers, road salt, etc.) This in turn is having a negative impact on the lakes weed growth, and water quality.
23	The high quantity of muskrats in the lake are having an impact of decreasing the beneficial aquatic vegetation for fish recruitment and survival. Also the large quantity of mergansers that inundate the lake in late fall have largely reduced the quantity of fish in the lake. The 4-6 loons that reside and feed on Silver Lake during the summer, have removed many of the smaller fish that are needed for higher quality growth causing lost fish and poor conditioning of the remaining fish. Unregulated boating operation on the lake, caused by very few enforcement officers in the area, are sometimes causing unsafe conditions on the lake and shorelines. The most violated regulation is from water skiers and PWC's operating to close to the shorelines, piers and rafts.

C

APPENDIX C

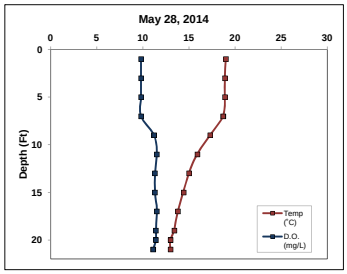
Water Quality Data

Silver Lake

Date: 5/28/2014
Time: 9:40
Weather: 50% clouds, 60F
Entry: EEH

Max Depth: 23.8
SLS Depth (ft): 3.0
SLB Depth (ft): 20.0
Secchi Depth (ft): 12.7

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	19.0	9.8		
3	18.9	9.8	8.6	
5	18.9	9.8		
7	18.7	9.8		
9	17.3	11.2		
11	15.9	11.5	9.0	
13	15.0	11.3		
15	14.4	11.3		
17	13.8	11.5		
19	13.4	11.4		
20	13.0	11.4	8.8	
21	13.0	11.1		



Parameter	SLS	SLB
Total P (µg/L)	21.80	14.60
Dissolved P (µg/L)	ND	ND
Chl-a (µg/L)	2.40	NA
TKN (µg/L)	629.00	645.00
$NO_3 + NO_2$-N (µg/L)	26.00	19.40
NH_3-N (µg/L)	ND	ND
Total N (µg/L)	655.00	664.40
Lab Cond. (µS/cm)	71.80	73.10
Lab pH	7.79	7.85
Alkalinity (mg/L $CaCO_3$)	32.30	32.90
Total Susp. Solids (mg/L)	2.00	2.80
Calcium (mg/L)	6.76	NA
Magnesium (mg/L)	3.78	NA
Hardness (mg/L)	32.40	NA
Color (SU)	5.00	NA
Turbidity (NTU)	NA	NA

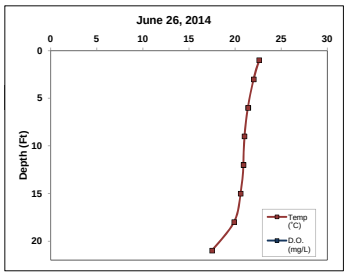
Data collected by JLW and TWH (Onterra)

Silver Lake

Date: 6/26/2014
Time: 13:30
Weather:
Entry: EEH

Max Depth:
SLS Depth (ft):
SLB Depth (ft):
Secchi Depth (ft): 16.0

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	22.6			
3	22.0			
6	21.4			
9	21.0			
12	20.9			
15	20.6			
18	19.9			
21	17.5			



Parameter	SLS	SLB
Total P (µg/L)	NA	NA
Dissolved P (µg/L)	NA	NA
Chl-a (µg/L)	NA	NA
TKN (µg/L)	582.00	NA
$NO_3 + NO_2$-N (µg/L)	ND	NA
NH_3-N (µg/L)	ND	NA
Total N (µg/L)	582.00	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

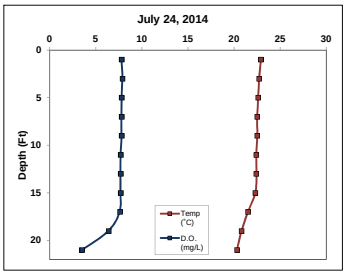
Data collected by Allen Bluhm

Silver Lake

Date: 7/24/2014
Time: 11:20
Weather: 25% clouds, 73F
Entry: EEH

Max Depth: 22.0
SLS Depth (ft): 3.0
SLB Depth (ft): 19.0
Secchi Depth (ft): 11.4

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	22.9	7.8		
3	22.7	7.9		
5	22.6	7.8		
7	22.5	7.8		
9	22.5	7.8		
11	22.4	7.7		
13	22.4	7.7		
15	22.3	7.7		
17	21.5	7.6		
19	20.8	6.4		
21	20.3	3.5		



Parameter	SLS	SLB
Total P (µg/L)	14.30	13.80
Dissolved P (µg/L)	NA	NA
Chl-a (µg/L)	2.09	NA
TKN (µg/L)	497.00	NA
$NO_3 + NO_2$-N (µg/L)	ND	NA
NH_3-N (µg/L)	ND	NA
Total N (µg/L)	497.00	NA
Lab Cond. (µS/cm)	74.20	75.00
Lab pH	7.76	7.66
Alkalinity (mg/L $CaCO_3$)	32.80	33.10
Total Susp. Solids (mg/L)	NA	NA
Calcium (mg/L)	NA	NA
Magnesium (mg/L)	NA	NA
Hardness (mg/L)	NA	NA
Color (SU)	10.00	NA
Turbidity (NTU)	NA	NA

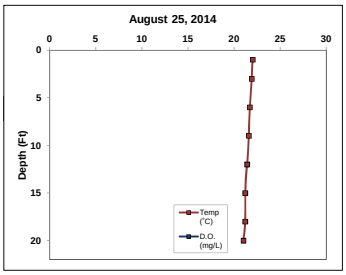
Data collected by TWH and SDF (Onterra)

Silver Lake

Date: 8/25/2014
Time: 13:40
Weather: 73.4 F, Wind 5-10 mph, partly cloudy
Entry: EEH

Max Depth:
SLS Depth (ft):
SLB Depth (ft):
Secchi Depth (ft): 9.0

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	22.0			
3	21.9			
6	21.7			
9	21.6			
12	21.4			
15	21.2			
18	21.2			
20	21.0			



Parameter	SLS	SLB
Total P (µg/L)	NA	NA
Dissolved P (µg/L)	NA	NA
Chl-a (µg/L)	NA	NA
TKN (µg/L)	701.00	NA
$NO_3 + NO_2$-N (µg/L)	ND	NA
NH_3-N (µg/L)	ND	NA
Total N (µg/L)	701.00	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

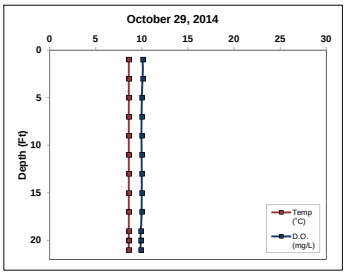
Data collected by Allen Bluhm

Silver Lake

Date: 10/29/2014
Time: 11:30
Weather: 44F, light breeze, 75% clouds
Entry: EEH

Max Depth: 23.3
SLS Depth (ft): 3.0
SLB Depth (ft): 20.0
Secchi Depth (ft): 10.9

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	8.6	10.1		
3	8.6	10.1	8.0	
5	8.6	10.0		
7	8.6	10.0		
9	8.6	10.0		
11	8.6	10.0	7.3	
13	8.6	10.0		
15	8.6	10.0		
17	8.6	10.0		
19	8.6	9.9		
20	8.6	9.9	6.8	
21	8.6	9.9		



Parameter	SLS	SLB
Total P (µg/L)	11.60	13.80
Dissolved P (µg/L)	NA	NA
Chl-a (µg/L)	3.26	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

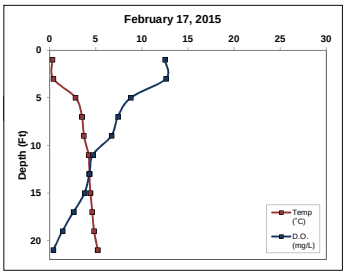
Data collected by TWH (Onterra)

Silver Lake

Date: 2/17/2015
Time: 11:05
Weather: 8F, 80% clouds, very little wind
Entry: EEH

Max Depth: 22.1
SLS Depth (ft): 3.0
SLB Depth (ft): 19.0
Secchi Depth (ft): 11.3

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	0.3	12.5		
3	0.4	12.6		
5	2.8	8.8		
7	3.5	7.4		
9	3.7	6.7		
11	4.2	4.7		
13	4.3	4.3		
15	4.4	3.8		
17	4.6	2.6		
19	4.8	1.4		
21	5.2	0.4		



Parameter	SLS	SLB
Total P (µg/L)	15.00	12.60
Dissolved P (µg/L)	ND	ND
Chl-a (µg/L)	NA	NA
TKN (µg/L)	669.00	1110.00
$NO_3 + NO_2$-N (µg/L)	20.00	ND
NH_3-N (µg/L)	172.00	592.00
Total N (µg/L)	689.00	1110.00
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 EEH and TWH (Onterra). Ice thickness: 1.7 feet.

Water Quality Data

2014-2015	Surface		Bottom	
Parameter	Count	Mean	Count	Mean
Secchi Depth (feet)	6	11.9	NA	NA
Total P (µg/L)	4	15.7	4	13.7
Dissolved P (µg/L)	2	ND	2	ND
Chl a (µg/L)	3	2.6	0	NA
TKN (µg/L	5	615.6	2	877.5
NO3+NO2-N (µg/L)	5	23.0	2	19.4
NH3-N (µg/L)	5	172.0	2	592.0
Total N (µg/L)	5	624.8	2	887.2
Lab Cond. (µS/cm)	2	73.0	2	74.1
Lab pH	2	7.8	2	7.8
Alkal (mg/l CaCO3)	2	32.6	2	33.0
Total Susp. Solids (mg/l)	2	2.0	2	2.8
Calcium (µg/L)	1	6.8	0	NA
Magnesium (mg/L)	1	3.8	0	NA
Hardness (mg/L)	1	32.4	0	NA
Color (SU)	2	7.5	0	NA
Turbidity (NTU)	0	NA	0	NA

Morphological / Geographical Data

Parameter	Value
Acreage	
Volume (acre-feet)	
Perimeter (miles)	
Shoreland Developmetnt Factor	
Maximum Depth (feet)	
County	
WBIC	
Lillie Mason Region (1983)	NLF Ecoregion
Nichols Ecoregion (1999)	NLFL

Watershed Data

WiLMS Class	Acreage	kg/yr	lbs/yr
Forest			0.0
Open Water			0.0
Pasture/Grass			0.0
Row Crops			0.0
Urban - Rural Residential			0.0
Wetland			0.0
Watershed to Lake Area			

Trophic State Index (TSI)

Year	TP	Chl-a	Secchi
1992			41.6
1993			41.9
1994	39.6	41.3	37.2
1995	38.3	39.7	40.3
1996	39.7	45.4	41.9
1997	41.1	40.7	38.6
1998	35.3	40.8	40.3
1999	45.0	41.1	42.4
2000	43.4	39.7	41.5
2001	39.6	40.7	41.3
2002	41.1	41.0	40.8
2003	39.6	42.7	38.3
2004	39.6	41.3	39.5
2005	34.1	39.5	37.2
2006	39.6	42.2	39.7
2007	35.8	43.4	38.6
2008	41.1	44.8	39.3
2009	40.8	42.1	38.4
2010	36.9	42.9	41.5
2011	37.4	41.9	39.4
2012	40.0	42.6	38.9
2013	36.2	39.8	37.5
2014	40.5	40.5	41.5
All Years (Weighted)	39.7	41.7	40.2
Shallow, Lowland Drainage Lakes	54.6	52.6	52.4
NLF Ecoregion	48.1	47.5	45.7

	Secchi (feet)				Chlorophyll-a (µg/L)				Total Phosphorus (µg/L)			
	Growing Season		Summer		Growing Season		Summer		Growing Season		Summer	
Year	Count	Mean	Count	Mean	Count	Mean	Count	Mean	Count	Mean	Count	Mean
1992	15	12.3	10	11.7								
1993	12	11.8	9	11.5								
1994	16	14.8	8	15.9	4	3.1	3	3.0	4	12.3	3.0	11.7
1995	8	12.0	5	12.9	5	3.4	3	2.5	4	10.3	3.0	10.7
1996	8	11.5	7	11.5	5	4.3	4	4.5	5	11.4	4.0	11.8
1997	5	13.9	4	14.4	4	2.8	3	2.8	4	12.8	3.0	13.0
1998	12	12.7	11	12.9	4	3.1	3	2.8	4	9.5	3.0	8.7
1999	12	11.2	11	11.2	4	2.8	3	2.9	4	15.3	3.0	17.0
2000	9	11.9	9	11.9	6	2.5	6	2.5	5	15.2	5.0	15.2
2001	8	12.3	5	12.1	3	3.2	2	2.8	4	11.3	3.0	11.7
2002	8	12.3	5	12.5	3	3.8	2	2.9	5	12.2	3.0	13.0
2003	8	15.4	4	14.8	4	3.3	3	3.4	6	11.3	3.0	11.7
2004	5	14.2	3	13.6	4	2.9	3	3.0	5	11.2	3.0	11.7
2005	7	17.1	3	16.0	4	2.7	3	2.5	5	10.6	3.0	8.0
2006	8	14.2	5	13.4	4	3.7	3	3.3	5	10.2	3.0	11.7
2007	6	15.1	4	14.5	3	3.4	2	3.7	4	13.5	2.0	9.0
2008	5	14.0	3	13.8	3	4.3	3	4.3	4	14.0	3.0	13.0
2009	4	13.6	3	14.7	3	3.2	3	3.2	4	13.0	3.0	12.7
2010	3	11.8	3	11.8	3	3.5	3	3.5	4	10.3	3.0	9.7
2011	6	14.8	3	13.7	3	3.2	3	3.2	4	9.8	3.0	10.0
2012	3	14.2	3	14.2	3	3.4	3	3.4	4	11.5	3.0	12.0
2013	4	15.6	4	15.6	3	2.6	3	2.6	4	10.0	3.0	9.3
2014	7	12.3	4	11.9	5	2.6	2	2.7	6	13.7	2.0	12.4
All Years (Weighted)		13.2		13.0		3.2		3.1		11.9		11.7
Shallow, Lowland Drainage Lakes				5.6				9.4				33.0
NLF Ecoregion				8.9				5.6				21.0

July 2014 N:	497.0
July 2014 P:	14.3
Summer 2014 N:P	35 :1

D

APPENDIX D

Watershed Analysis WiLMS Results

Date: 7/2/2015 Scenario: Silver Lake Watershed Current

Lake Id: Silver_WS_Current

Watershed Id: 0

Hydrologic and Morphometric Data

Tributary Drainage Area: 564.2 acre
Total Unit Runoff: 13.10 in.
Annual Runoff Volume: 615.9 acre-ft
Lake Surface Area <As>: 320.0 acre
Lake Volume <V>: 3737.0 acre-ft
Lake Mean Depth <z>: 11.7 ft
Precipitation - Evaporation: 5.3 in.
Hydraulic Loading: 757.3 acre-ft/year
Areal Water Load <qs>: 2.4 ft/year
Lake Flushing Rate <p>: 0.20 1/year
Water Residence Time: 4.93 year
Observed spring overturn total phosphorus (SPO): 12.6 mg/m^3
Observed growing season mean phosphorus (GSM): 11.9 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	2.1	0.50	1.00	3.00	1.3	0	1	3
Mixed AG	0.0	0.30	0.80	1.40	0.0	0	0	0
Pasture/Grass	34.5	0.10	0.30	0.50	6.5	1	4	7
HD Urban (1/8 Ac)	0.0	1.00	1.50	2.00	0.0	0	0	0
MD Urban (1/4 Ac)	0.0	0.30	0.50	0.80	0.0	0	0	0
Rural Res (>1 Ac)	96.0	0.05	0.10	0.25	6.0	2	4	10
Wetlands	34.8	0.10	0.10	0.10	2.2	1	1	1
Forest	396.8	0.05	0.09	0.18	22.5	8	14	29
Golf Course	0.0	0.00	0.19	0.00	0.0	0	0	0
Lake Surface	320.0	0.10	0.30	1.00	60.4	13	39	130

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)		0.30	0.50	0.80	
# capita-years	13.0				
% Phosphorus Retained by Soil		98.0	90.0	80.0	
Septic Tank Loading (kg/year)		0.08	0.65	2.08	1.0

TOTALS DATA

Description	Low	Most Likely	High	Loading %
Total Loading (lb)	57.8	141.7	399.3	100.0
Total Loading (kg)	26.2	64.3	181.1	100.0
Areal Loading (lb/ac-year)	0.18	0.44	1.25	
Areal Loading (mg/m^2-year)	20.25	49.64	139.88	
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)	29.1	54.6	109.3	99.0
Total NPS Loading (kg)	13.2	24.8	49.6	99.0

Phosphorus Prediction and Uncertainty Analysis Module

Date: 7/2/2015 Scenario: Silver Lake Watershed Current
Observed spring overturn total phosphorus (SPO): 12.6 mg/m^3
Observed growing season mean phosphorus (GSM): 11.9 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	12	30	85	18	151
Canfield-Bachmann, 1981 Natural Lake	10	19	37	7	59
Canfield-Bachmann, 1981 Artificial Lake	11	19	33	7	59
Rechow, 1979 General	2	4	11	-8	-67
Rechow, 1977 Anoxic	14	35	98	23	193
Rechow, 1977 water load<50m/year	4	9	25	-3	-25
Rechow, 1977 water load>50m/year	N/A	N/A	N/A	N/A	N/A
Walker, 1977 General	10	25	72	12	95
Vollenweider, 1982 Combined OECD	9	19	45	7	57
Dillon-Rigler-Kirchner	7	16	46	3	24
Vollenweider, 1982 Shallow Lake/Res.	7	15	38	3	24
Larsen-Mercier, 1976	9	21	60	8	63
Nurnberg, 1984 Oxic	6	14	39	2	17

Lake Phosphorus Model	Confidence Lower Bound	Confidence Upper Bound	Parameter Fit?	Back Calculation (kg/year)	Model Type
Walker, 1987 Reservoir	16	65	Tw	0	GSM
Canfield-Bachmann, 1981 Natural Lake	6	55	FIT	1	GSM
Canfield-Bachmann, 1981 Artificial Lake	6	55	FIT	1	GSM
Rechow, 1979 General	2	9	L qs	0	GSM
Rechow, 1977 Anoxic	19	75	FIT	0	GSM
Rechow, 1977 water load<50m/year	5	19	FIT	0	GSM
Rechow, 1977 water load>50m/year	N/A	N/A	N/A	N/A	N/A
Walker, 1977 General	12	57	FIT	0	SPO
Vollenweider, 1982 Combined OECD	9	39	FIT	0	ANN
Dillon-Rigler-Kirchner	9	35	P L qs p	0	SPO
Vollenweider, 1982 Shallow Lake/Res.	7	32	FIT	0	ANN
Larsen-Mercier, 1976	12	46	P Pin	0	SPO
Nurnberg, 1984 Oxic	7	31	FIT	0	ANN

E

APPENDIX E

Aquatic Plant Survey Data

Point Number	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Lake Name	County	Date	Field Crew	Point Number	Depth (ft)	Sediment	Pole; Rope	Comments	Notes	Nuisance	TRF	Brasenia schreberi	Bidens beckii	Chara spp.	Eleocharis acicularis	Elodea canadensis	Isoetes spp.	Juncus pelocarpus	Myriophyllum tenellum	Najas flexilis	Najas guadalupensis	Nitella spp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton berchtoldii	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton natans	Potamogeton richardsonii	Potamogeton robbinsii	Ranunculus flammula	Sagittaria cristata	Sparganium angustifolium	Utricularia vulgaris	Vallisneria americana
1	45.552128	-88.700287	Silver Lake	Forest	7/23/2014	BTB & CMC	1	4	Sand	Pole	SAMPLED			1			1	1			1		1		1								1						
2	45.552121	-88.699621	Silver Lake	Forest	7/22/2014	BTB & CMC	2	8	Muck	Pole	SAMPLED			1				1					1		1														1
3	45.552113	-88.698955	Silver Lake	Forest	7/22/2014	BTB & CMC	3	6	Rock	Pole	SAMPLED			0																									
4	45.552106	-88.698289	Silver Lake	Forest	7/22/2014	BTB & CMC	4	8	Sand	Pole	SAMPLED			1			1								1														
5	45.552098	-88.697623	Silver Lake	Forest	7/22/2014	BTB & CMC	5	2	Sand	Pole	SAMPLED			0																									
6	45.552702	-88.709601	Silver Lake	Forest	7/23/2014	BTB & CMC	6	2	Sand	Pole	SAMPLED			0																									
7	45.552695	-88.708935	Silver Lake	Forest	7/23/2014	BTB & CMC	7	4	Rock	Pole	SAMPLED			0																									
8	45.552687	-88.708269	Silver Lake	Forest	7/23/2014	BTB & CMC	8	8	Muck	Pole	SAMPLED			1										1															
9	45.552680	-88.707603	Silver Lake	Forest	7/23/2014	BTB & CMC	9	8	Muck	Pole	SAMPLED			2		1									1					1			1	2					1
10	45.552672	-88.706937	Silver Lake	Forest	7/23/2014	BTB & CMC	10	7	Rock	Pole	SAMPLED			0																									
11	45.552664	-88.706271	Silver Lake	Forest	7/23/2014	BTB & CMC	11	6	Sand	Pole	SAMPLED			1			1																						
12	45.552642	-88.704273	Silver Lake	Forest	7/23/2014	BTB & CMC	12	5	Muck	Pole	SAMPLED			2			1	1			2				1				1				1			1			1
13	45.552634	-88.703607	Silver Lake	Forest	7/23/2014	BTB & CMC	13	7	Rock	Pole	SAMPLED			0																									
14	45.552627	-88.702941	Silver Lake	Forest	7/23/2014	BTB & CMC	14	7	Sand	Pole	SAMPLED			1			1						1	1							1							
15	45.552619	-88.702275	Silver Lake	Forest	7/23/2014	BTB & CMC	15	5	Rock	Pole	SAMPLED			1				1																				
16	45.552604	-88.700943	Silver Lake	Forest	7/23/2014	BTB & CMC	16	6	Rock	Pole	SAMPLED			1			1																						
17	45.552596	-88.700276	Silver Lake	Forest	7/23/2014	BTB & CMC	17	7	Sand	Pole	SAMPLED			1			1																						
18	45.552589	-88.699610	Silver Lake	Forest	7/22/2014	BTB & CMC	18	10	Sand	Pole	SAMPLED			1											1							1							
19	45.552581	-88.698944	Silver Lake	Forest	7/22/2014	BTB & CMC	19	9	Sand	Pole	SAMPLED			1										1						1									
20	45.552574	-88.698278	Silver Lake	Forest	7/22/2014	BTB & CMC	20	9	Sand	Pole	SAMPLED			0																									
21	45.552566	-88.697612	Silver Lake	Forest	7/22/2014	BTB & CMC	21	5	Sand	Pole	SAMPLED			1								1																	
22	45.553230	-88.714919	Silver Lake	Forest	7/23/2014	BTB & CMC	22	3	Sand	Pole	SAMPLED			1																									1
23	45.553215	-88.713587	Silver Lake	Forest	7/23/2014	BTB & CMC	23	5	Sand	Pole	SAMPLED			1			1	1			1					1								1					
24	45.553208	-88.712920	Silver Lake	Forest	7/23/2014	BTB & CMC	24	2	Sand	Pole	SAMPLED			1			1				1					1									1				
25	45.553170	-88.709590	Silver Lake	Forest	7/23/2014	BTB & CMC	25	3	Muck	Pole	SAMPLED			1										1											1				
26	45.553163	-88.708924	Silver Lake	Forest	7/23/2014	BTB & CMC	26	7	Muck	Pole	SAMPLED			1			1							1	1													
27	45.553155	-88.708258	Silver Lake	Forest	7/23/2014	BTB & CMC	27	9	Muck	Pole	SAMPLED			1			1							1														
28	45.553147	-88.707592	Silver Lake	Forest	7/23/2014	BTB & CMC	28	10	Muck	Pole	SAMPLED			1										1	1													
29	45.553140	-88.706926	Silver Lake	Forest	7/23/2014	BTB & CMC	29	11	Muck	Pole	SAMPLED			1			1							1	1													
30	45.553132	-88.706260	Silver Lake	Forest	7/23/2014	BTB & CMC	30	10	Muck	Pole	SAMPLED			0																									
31	45.553125	-88.705594	Silver Lake	Forest	7/23/2014	BTB & CMC	31	10	Sand	Pole	SAMPLED			1										1														
32	45.553117	-88.704928	Silver Lake	Forest	7/23/2014	BTB & CMC	32	4	Sand	Pole	SAMPLED			1							1																	
33	45.553110	-88.704262	Silver Lake	Forest	7/23/2014	BTB & CMC	33	8	Sand	Pole	SAMPLED			1										1														
34	45.553102	-88.703596	Silver Lake	Forest	7/23/2014	BTB & CMC	34	11	Sand	Pole	SAMPLED			1										1	1													
35	45.553095	-88.702930	Silver Lake	Forest	7/23/2014	BTB & CMC	35	10	Muck	Pole	SAMPLED			2											1									1					2
36	45.553087	-88.702264	Silver Lake	Forest	7/23/2014	BTB & CMC	36	10	Muck	Pole	SAMPLED			1																	1							
37	45.553079	-88.701598	Silver Lake	Forest	7/23/2014	BTB & CMC	37	10	Sand	Pole	SAMPLED			1										1	1						1							
38	45.553072	-88.700932	Silver Lake	Forest	7/23/2014	BTB & CMC	38	9	Rock	Pole	SAMPLED			1			1																					
39	45.553064	-88.700266	Silver Lake	Forest	7/23/2014	BTB & CMC	39	6	Rock	Pole	SAMPLED			0																									
40	45.553057	-88.699600	Silver Lake	Forest	7/22/2014	BTB & CMC	40	10	Muck	Pole	SAMPLED			2										1															2
41	45.553049	-88.698934	Silver Lake	Forest	7/22/2014	BTB & CMC	41	12	Muck	Pole	SAMPLED			0																									
42	45.553042	-88.698268	Silver Lake	Forest	7/22/2014	BTB & CMC	42	10	Sand	Pole	SAMPLED			1										1	1													
43	45.553034	-88.697602	Silver Lake	Forest	7/22/2014	BTB & CMC	43	9	Muck	Pole	SAMPLED			1										1	1													
44	45.553026	-88.696936	Silver Lake	Forest	7/22/2014	BTB & CMC	44	9	Muck	Pole	SAMPLED			1										1														
45	45.553019	-88.696269	Silver Lake	Forest	7/22/2014	BTB & CMC	45	7	Sand	Pole	SAMPLED			2			1	1			1									1									1
46	45.553735	-88.718238	Silver Lake	Forest	7/23/2014	BTB & CMC	46	2	Muck	Pole	SAMPLED			1									1				1										1	
47	45.553721	-88.716906	Silver Lake	Forest	7/23/2014	BTB & CMC	47	2	Muck	Pole	SAMPLED			1	1												1					1				1			
48	45.553713	-88.716240	Silver Lake	Forest	7/23/2014	BTB & CMC	48	4	Muck	Pole	SAMPLED			0																									
49	45.553706	-88.715574	Silver Lake	Forest	7/23/2014	BTB & CMC	49	5	Muck	Pole	SAMPLED			0																									
50	45.553698	-88.714908	Silver Lake	Forest	7/23/2014	BTB & CMC	50	5	Muck	Pole	SAMPLED			0																									
51	45.553691	-88.714242	Silver Lake	Forest	7/23/2014	BTB & CMC	51	5	Muck	Pole	SAMPLED			2										1										1	2				
52	45.553683	-88.713576	Silver Lake	Forest	7/23/2014	BTB & CMC	52	7	Muck	Pole	SAMPLED			1										1											1				
53	45.553676	-88.712910	Silver Lake	Forest	7/23/2014	BTB & CMC	53	6	Muck	Pole	SAMPLED			3																					3				
54	45.553668	-88.712244	Silver Lake	Forest	7/23/2014	BTB & CMC	54	7	Muck	Pole	SAMPLED			2										1										1	2				
55	45.553661	-88.711578	Silver Lake	Forest	7/23/2014	BTB & CMC	55	2	Rock	Pole	SAMPLED			1																								1	
56	45.553638	-88.709580	Silver Lake	Forest	7/23/2014	BTB & CMC	56	7	Muck	Pole	SAMPLED			1											1									1	1				1
57	45.553630	-88.708914	Silver Lake	Forest	7/23/2014	BTB & CMC	57	8	Muck	Pole	SAMPLED			2			1							1	1									2				
58	45.553623	-88.708247	Silver Lake	Forest	7/23/2014	BTB & CMC	58	10	Muck	Pole	SAMPLED			1										1														
59	45.553615	-88.707581	Silver Lake	Forest	7/23/2014	BTB & CMC	59	10	Muck	Pole	SAMPLED			2										1							2				1			
60	45.553608	-88.706915	Silver Lake	Forest	7/23/2014	BTB & CMC	60	12	Muck	Pole	SAMPLED			2										1											1				1
61	45.553600	-88.706249	Silver Lake	Forest	7/23/2014	BTB & CMC	61	10	Rock	Pole	SAMPLED			1										1														
62	45.553593	-88.705583	Silver Lake	Forest	7/23/2014	BTB & CMC	62	11	Muck	Pole	SAMPLED			0																									
63	45.553585	-88.704917	Silver Lake	Forest	7/23/2014	BTB & CMC	63	10	Sand	Pole	SAMPLED			1			1						1	1	1														
64	45.553578	-88.704251	Silver Lake	Forest	7/23/2014	BTB & CMC	64	8	Sand	Pole	SAMPLED			1			1																						
65	45.553570	-88.703585	Silver Lake	Forest	7/23/2014	BTB & CMC	65	14	Muck	Pole	SAMPLED			1										1	1													
66	45.553563	-88.702919	Silver Lake	Forest	7/23/2014	BTB & CMC	66	14		Rope	SAMPLED			0																									
67	45.553555	-88.702253	Silver Lake	Forest	7/23/2014	BTB & CMC	67	15	Muck	Pole	SAMPLED			2			1							1	2													
68	45.553547	-88.701587	Silver Lake	Forest	7/23/2014	BTB & CMC	68	14	Sand	Pole	SAMPLED			2											1									2	1				

Point Number	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Lake Name	County	Date	Field Crew	Point Number	Depth (ft)	Sediment	Pole; Rope	Comments	Notes	Nuisance	TRF	Brasenia schreberi	Bidens beckii	Chara spp.	Eleocharis acicularis	Elodea canadensis	Isoetes spp.	Juncus pelocarpus	Myriophyllum tenellum	Najas flexilis	Najas guadalupensis	Nitella spp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton berchtoldii	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton natans	Potamogeton richardsonii	Potamogeton robbinsii	Ranunculus flammula	Sagittaria cristata	Sparganium angustifolium	Utricularia vulgaris	Vallisneria americana
69	45.553540	-88.700921	Silver Lake	Forest	7/23/2014	BTB & CMC	69	13	Muck	Pole	SAMPLED			1										1	1						1								1
70	45.553532	-88.700255	Silver Lake	Forest	7/23/2014	BTB & CMC	70	12	Muck	Pole	SAMPLED			2										2	1														
71	45.553525	-88.699589	Silver Lake	Forest	7/22/2014	BTB & CMC	71	11	Muck	Pole	SAMPLED			2										1	2														
72	45.553517	-88.698923	Silver Lake	Forest	7/22/2014	BTB & CMC	72	11	Muck	Pole	SAMPLED			2										1	1														2
73	45.553509	-88.698257	Silver Lake	Forest	7/22/2014	BTB & CMC	73	12	Sand	Pole	SAMPLED			1										1	1														
74	45.553502	-88.697591	Silver Lake	Forest	7/22/2014	BTB & CMC	74	8	Muck	Pole	SAMPLED			1			1								1														1
75	45.553494	-88.696925	Silver Lake	Forest	7/22/2014	BTB & CMC	75	8	Muck	Pole	SAMPLED			0																									
76	45.553487	-88.696259	Silver Lake	Forest	7/22/2014	BTB & CMC	76	9	Muck	Pole	SAMPLED			2					1					1										1	2				
77	45.553479	-88.695593	Silver Lake	Forest	7/22/2014	BTB & CMC	77	5	Sand	Pole	SAMPLED			0																									
78	45.554203	-88.718228	Silver Lake	Forest	7/23/2014	BTB & CMC	78	0			NONNAVIGABLE (PLANTS)																													
79	45.554196	-88.717562	Silver Lake	Forest	7/23/2014	BTB & CMC	79	2	Muck	Pole	SAMPLED			2					1										1									1	
80	45.554188	-88.716895	Silver Lake	Forest	7/23/2014	BTB & CMC	80	4	Muck	Pole	SAMPLED			0																									
81	45.554181	-88.716229	Silver Lake	Forest	7/23/2014	BTB & CMC	81	5	Muck	Pole	SAMPLED			1																								1	
82	45.554173	-88.715563	Silver Lake	Forest	7/23/2014	BTB & CMC	82	5	Muck	Pole	SAMPLED			0																									
83	45.554166	-88.714897	Silver Lake	Forest	7/23/2014	BTB & CMC	83	5	Muck	Pole	SAMPLED			1																						1				
84	45.554158	-88.714231	Silver Lake	Forest	7/23/2014	BTB & CMC	84	6	Muck	Pole	SAMPLED			2										1											2				
85	45.554151	-88.713565	Silver Lake	Forest	7/23/2014	BTB & CMC	85	6	Muck	Pole	SAMPLED			1			1							1	0								1	1				
86	45.554143	-88.712899	Silver Lake	Forest	7/23/2014	BTB & CMC	86	6	Muck	Pole	SAMPLED			2		1	1								1							1	1				
87	45.554136	-88.712233	Silver Lake	Forest	7/23/2014	BTB & CMC	87	8	Muck	Pole	SAMPLED			1																			1				
88	45.554128	-88.711567	Silver Lake	Forest	7/23/2014	BTB & CMC	88	10	Muck	Pole	SAMPLED			1										1														
89	45.554121	-88.710901	Silver Lake	Forest	7/23/2014	BTB & CMC	89	11	Sand	Rope	SAMPLED			2											1								1					2
90	45.554113	-88.710235	Silver Lake	Forest	7/23/2014	BTB & CMC	90	5	Rock	Pole	SAMPLED			1			1	1				1																
91	45.554106	-88.709569	Silver Lake	Forest	7/23/2014	BTB & CMC	91	8	Rock	Pole	SAMPLED			0																									
92	45.554098	-88.708903	Silver Lake	Forest	7/23/2014	BTB & CMC	92	13	Sand	Pole	SAMPLED			1										1	1								1					
93	45.554091	-88.708237	Silver Lake	Forest	7/23/2014	BTB & CMC	93	12	Muck	Pole	SAMPLED			1										1	1													
94	45.554083	-88.707571	Silver Lake	Forest	7/23/2014	BTB & CMC	94	11	Rock	Pole	SAMPLED			1			1																					
95	45.554076	-88.706905	Silver Lake	Forest	7/23/2014	BTB & CMC	95	11	Sand	Pole	SAMPLED			1										1	1													
96	45.554068	-88.706239	Silver Lake	Forest	7/23/2014	BTB & CMC	96	12	Sand	Pole	SAMPLED			1			1																					
97	45.554061	-88.705573	Silver Lake	Forest	7/23/2014	BTB & CMC	97	17		Rope	SAMPLED			2										1											1				
98	45.554053	-88.704906	Silver Lake	Forest	7/23/2014	BTB & CMC	98	17		Rope	SAMPLED			2										2	1													
99	45.554046	-88.704240	Silver Lake	Forest	7/23/2014	BTB & CMC	99	16		Rope	SAMPLED			1											1													
100	45.554038	-88.703574	Silver Lake	Forest	7/23/2014	BTB & CMC	100	18		Rope	SAMPLED			1										1														
101	45.554030	-88.702908	Silver Lake	Forest	7/23/2014	BTB & CMC	101	16		Rope	SAMPLED			1			1							1	1													
102	45.554023	-88.702242	Silver Lake	Forest	7/23/2014	BTB & CMC	102	17		Rope	SAMPLED			1										1	1										1			
103	45.554015	-88.701576	Silver Lake	Forest	7/23/2014	BTB & CMC	103	15		Rope	SAMPLED			2										2	1										1			
104	45.554008	-88.700910	Silver Lake	Forest	7/23/2014	BTB & CMC	104	14	Muck	Pole	SAMPLED			1										1	1													
105	45.554000	-88.700244	Silver Lake	Forest	7/23/2014	BTB & CMC	105	13	Muck	Pole	SAMPLED			2										1	2													
106	45.553993	-88.699578	Silver Lake	Forest	7/22/2014	BTB & CMC	106	14	Muck	Pole	SAMPLED			1										1	1													
107	45.553985	-88.698912	Silver Lake	Forest	7/22/2014	BTB & CMC	107	13	Muck	Pole	SAMPLED			1			1								1													
108	45.553977	-88.698246	Silver Lake	Forest	7/22/2014	BTB & CMC	108	12	Muck	Pole	SAMPLED			2										1											2			
109	45.553970	-88.697580	Silver Lake	Forest	7/22/2014	BTB & CMC	109	10	Muck	Pole	SAMPLED			0																									
110	45.553962	-88.696914	Silver Lake	Forest	7/22/2014	BTB & CMC	110	9	Muck	Pole	SAMPLED			1											1													
111	45.553955	-88.696248	Silver Lake	Forest	7/22/2014	BTB & CMC	111	10	Muck	Pole	SAMPLED			1			1							1	1													1
112	45.553947	-88.695582	Silver Lake	Forest	7/22/2014	BTB & CMC	112	6	Muck	Pole	SAMPLED			2				1			1			1						1								1
113	45.554664	-88.717551	Silver Lake	Forest	7/23/2014	BTB & CMC	113	2	Muck	Pole	SAMPLED			1	1											1												
114	45.554656	-88.716885	Silver Lake	Forest	7/23/2014	BTB & CMC	114	3	Muck	Pole	SAMPLED			1												1												
115	45.554649	-88.716219	Silver Lake	Forest	7/23/2014	BTB & CMC	115	4	Muck	Pole	SAMPLED			1												1												
116	45.554641	-88.715553	Silver Lake	Forest	7/23/2014	BTB & CMC	116	5	Muck	Pole	SAMPLED			0																									
117	45.554634	-88.714887	Silver Lake	Forest	7/23/2014	BTB & CMC	117	5	Muck	Pole	SAMPLED			2																						2			
118	45.554626	-88.714221	Silver Lake	Forest	7/23/2014	BTB & CMC	118	6	Muck	Pole	SAMPLED			1			1		1					1				1										1
119	45.554619	-88.713555	Silver Lake	Forest	7/23/2014	BTB & CMC	119	7	Muck	Pole	SAMPLED			2											2			1										
120	45.554611	-88.712888	Silver Lake	Forest	7/23/2014	BTB & CMC	120	8	Muck	Pole	SAMPLED			2			2							1														
121	45.554604	-88.712222	Silver Lake	Forest	7/23/2014	BTB & CMC	121	10	Muck	Pole	SAMPLED			2										1	1										1			2
122	45.554596	-88.711556	Silver Lake	Forest	7/23/2014	BTB & CMC	122	12	Muck	Pole	SAMPLED			1										1														
123	45.554589	-88.710890	Silver Lake	Forest	7/23/2014	BTB & CMC	123	16	Muck	Pole	SAMPLED			2																						2			
124	45.554581	-88.710224	Silver Lake	Forest	7/23/2014	BTB & CMC	124	16		Rope	SAMPLED			2					1					1	1										1			
125	45.554574	-88.709558	Silver Lake	Forest	7/23/2014	BTB & CMC	125	15		Rope	SAMPLED			2			1							1											2			
126	45.554566	-88.708892	Silver Lake	Forest	7/23/2014	BTB & CMC	126	16		Rope	SAMPLED			1										1											1			
127	45.554559	-88.708226	Silver Lake	Forest	7/23/2014	BTB & CMC	127	16		Rope	SAMPLED			1										1														
128	45.554551	-88.707560	Silver Lake	Forest	7/23/2014	BTB & CMC	128	16		Rope	SAMPLED			1											1													
129	45.554544	-88.706894	Silver Lake	Forest	7/23/2014	BTB & CMC	129	19		Rope	SAMPLED			2											2													
130	45.554536	-88.706228	Silver Lake	Forest	7/23/2014	BTB & CMC	130	19		Rope	SAMPLED			1											1													
131	45.554529	-88.705562	Silver Lake	Forest	7/23/2014	BTB & CMC	131	19		Rope	SAMPLED			2										1	2													
132	45.554521	-88.704896	Silver Lake	Forest	7/23/2014	BTB & CMC	132	19		Rope	SAMPLED			1											1										1			
133	45.554514	-88.704230	Silver Lake	Forest	7/23/2014	BTB & CMC	133	19		Rope	SAMPLED			2			1								2													
134	45.554506	-88.703564	Silver Lake	Forest	7/23/2014	BTB & CMC	134	19		Rope	SAMPLED			1											1													
135	45.554498	-88.702898	Silver Lake	Forest	7/23/2014	BTB & CMC	135	17		Rope	SAMPLED			1											1													
136	45.554491	-88.702232	Silver Lake	Forest	7/23/2014	BTB & CMC	136	17		Rope	SAMPLED			1										1	1													

Point Number	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Lake Name	County	Date	Field Crew	Point Number	Depth (ft)	Sediment	Pole; Rope	Comments	Notes	Nuisance	TRF	Brasenia schreberi	Bidens beckii	Chara spp.	Eleocharis acicularis	Elodea canadensis	Isoetes spp.	Juncus pelocarpus	Myriophyllum tenellum	Najas flexilis	Najas guadalupensis	Nitella spp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton berchtoldii	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton natans	Potamogeton richardsonii	Potamogeton robbinsii	Ranunculus flammula	Sagittaria cristata	Sparganium angustifolium	Utricularia vulgaris	Vallisneria americana
137	45.554483	-88.701565	Silver Lake	Forest	7/23/2014	BTB & CMC	137	16		Rope	SAMPLED			2			2							1	1														
138	45.554476	-88.700899	Silver Lake	Forest	7/23/2014	BTB & CMC	138	15	Muck	Pole	SAMPLED			1										1	1									1					
139	45.554468	-88.700233	Silver Lake	Forest	7/23/2014	BTB & CMC	139	14	Muck	Pole	SAMPLED			1										1	1						1								
140	45.554461	-88.699567	Silver Lake	Forest	7/22/2014	BTB & CMC	140	13	Muck	Pole	SAMPLED			0																									
141	45.554453	-88.698901	Silver Lake	Forest	7/22/2014	BTB & CMC	141	12	Muck	Pole	SAMPLED			2																	2								
142	45.554445	-88.698235	Silver Lake	Forest	7/22/2014	BTB & CMC	142	11	Muck	Pole	SAMPLED			1										1	1						1								
143	45.554438	-88.697569	Silver Lake	Forest	7/22/2014	BTB & CMC	143	10	Muck	Pole	SAMPLED			1											1														
144	45.554430	-88.696903	Silver Lake	Forest	7/22/2014	BTB & CMC	144	8	Muck	Pole	SAMPLED			2										1	1			1						1					2
145	45.554423	-88.696237	Silver Lake	Forest	7/22/2014	BTB & CMC	145	8	Muck	Pole	SAMPLED			2										1	1									2					1
146	45.554415	-88.695571	Silver Lake	Forest	7/22/2014	BTB & CMC	146	6	Muck	Pole	SAMPLED			2				1						1					1										2
147	45.555132	-88.717540	Silver Lake	Forest	7/23/2014	BTB & CMC	147	3	Muck	Pole	SAMPLED			1												1	1											
148	45.555124	-88.716874	Silver Lake	Forest	7/23/2014	BTB & CMC	148	3	Muck	Pole	SAMPLED			1													1											
149	45.555117	-88.716208	Silver Lake	Forest	7/23/2014	BTB & CMC	149	4	Muck	Pole	SAMPLED			0																								
150	45.555109	-88.715542	Silver Lake	Forest	7/23/2014	BTB & CMC	150	2	Sand	Pole	SAMPLED			1								1																
151	45.555102	-88.714876	Silver Lake	Forest	7/23/2014	BTB & CMC	151	6	Muck	Pole	SAMPLED			1										1														
152	45.555094	-88.714210	Silver Lake	Forest	7/23/2014	BTB & CMC	152	6	Muck	Pole	SAMPLED			2			1							1	1			2						1					1
153	45.555087	-88.713544	Silver Lake	Forest	7/23/2014	BTB & CMC	153	7	Muck	Pole	SAMPLED			3										1										2					2
154	45.555079	-88.712878	Silver Lake	Forest	7/23/2014	BTB & CMC	154	9	Muck	Pole	SAMPLED			1			1							1	1					1								
155	45.555072	-88.712212	Silver Lake	Forest	7/23/2014	BTB & CMC	155	12	Muck	Pole	SAMPLED			1										1	1													
156	45.555064	-88.711546	Silver Lake	Forest	7/23/2014	BTB & CMC	156	16		Rope	SAMPLED			2										2										1					
157	45.555057	-88.710880	Silver Lake	Forest	7/23/2014	BTB & CMC	157	15		Rope	SAMPLED			2										1	1									1					
158	45.555049	-88.710213	Silver Lake	Forest	7/23/2014	BTB & CMC	158	16		Rope	SAMPLED			2			1							1										2					
159	45.555042	-88.709547	Silver Lake	Forest	7/23/2014	BTB & CMC	159	18		Rope	SAMPLED			2											1									2					
160	45.555034	-88.708881	Silver Lake	Forest	7/23/2014	BTB & CMC	160	18		Rope	SAMPLED			2											1									2					
161	45.555027	-88.708215	Silver Lake	Forest	7/23/2014	BTB & CMC	161	18		Rope	SAMPLED			2										1	2														
162	45.555019	-88.707549	Silver Lake	Forest	7/23/2014	BTB & CMC	162	18		Rope	SAMPLED			1					1						1														
163	45.555012	-88.706883	Silver Lake	Forest	7/23/2014	BTB & CMC	163	19		Rope	SAMPLED			2											1									2					
164	45.555004	-88.706217	Silver Lake	Forest	7/23/2014	BTB & CMC	164	20		Rope	SAMPLED			2											2									1					
165	45.554997	-88.705551	Silver Lake	Forest	7/23/2014	BTB & CMC	165	20		Rope	SAMPLED			2											2														
166	45.554989	-88.704885	Silver Lake	Forest	7/23/2014	BTB & CMC	166	20		Rope	SAMPLED			1											1														
167	45.554981	-88.704219	Silver Lake	Forest	7/23/2014	BTB & CMC	167	19		Rope	SAMPLED			2			1							1	1									2					
168	45.554974	-88.703553	Silver Lake	Forest	7/23/2014	BTB & CMC	168	18		Rope	SAMPLED			1											1														
169	45.554966	-88.702887	Silver Lake	Forest	7/23/2014	BTB & CMC	169	17		Rope	SAMPLED			1										1	1														
170	45.554959	-88.702221	Silver Lake	Forest	7/23/2014	BTB & CMC	170	16		Rope	SAMPLED			1										1	1														
171	45.554951	-88.701555	Silver Lake	Forest	7/23/2014	BTB & CMC	171	16		Rope	SAMPLED			1										1	1														
172	45.554944	-88.700889	Silver Lake	Forest	7/23/2014	BTB & CMC	172	14	Muck	Pole	SAMPLED			1										1															
173	45.554936	-88.700223	Silver Lake	Forest	7/23/2014	BTB & CMC	173	13	Muck	Pole	SAMPLED			1										1											1					
174	45.554928	-88.699556	Silver Lake	Forest	7/22/2014	BTB & CMC	174	13	Muck	Pole	SAMPLED			1										1	1										1					1
175	45.554921	-88.698890	Silver Lake	Forest	7/22/2014	BTB & CMC	175	12	Muck	Pole	SAMPLED			1										1	1														
176	45.554913	-88.698224	Silver Lake	Forest	7/22/2014	BTB & CMC	176	11	Muck	Pole	SAMPLED			1			1								1														1
177	45.554906	-88.697558	Silver Lake	Forest	7/22/2014	BTB & CMC	177	9	Muck	Pole	SAMPLED			1											1										1					1
178	45.554898	-88.696892	Silver Lake	Forest	7/22/2014	BTB & CMC	178	4	Sand	Pole	SAMPLED			1																					1					
179	45.554890	-88.696226	Silver Lake	Forest	7/22/2014	BTB & CMC	179	0			TERRESTRIAL																												
180	45.554883	-88.695560	Silver Lake	Forest	7/22/2014	BTB & CMC	180	0			TERRESTRIAL																												
181	45.555592	-88.716864	Silver Lake	Forest	7/23/2014	BTB & CMC	181	2	Muck	Pole	SAMPLED			1	1												1			1								
182	45.555585	-88.716197	Silver Lake	Forest	7/23/2014	BTB & CMC	182	2	Muck	Pole	SAMPLED			1	1											1	1												
183	45.555577	-88.715531	Silver Lake	Forest	7/23/2014	BTB & CMC	183	0			TERRESTRIAL																												
184	45.555570	-88.714865	Silver Lake	Forest	7/23/2014	BTB & CMC	184	7	Sand	Pole	SAMPLED			1				1						1	1											1			
185	45.555562	-88.714199	Silver Lake	Forest	7/23/2014	BTB & CMC	185	8	Muck	Pole	SAMPLED			2										1	1			1											
186	45.555555	-88.713533	Silver Lake	Forest	7/23/2014	BTB & CMC	186	8	Muck	Pole	SAMPLED			2										1	2			1						1					1
187	45.555547	-88.712867	Silver Lake	Forest	7/23/2014	BTB & CMC	187	9	Muck	Pole	SAMPLED			1										1	1									1					
188	45.555540	-88.712201	Silver Lake	Forest	7/23/2014	BTB & CMC	188	10	Muck	Pole	SAMPLED			1										1	1														
189	45.555532	-88.711535	Silver Lake	Forest	7/23/2014	BTB & CMC	189	16		Rope	SAMPLED			1										1															
190	45.555525	-88.710869	Silver Lake	Forest	7/23/2014	BTB & CMC	190	17		Rope	SAMPLED			1			1																	1					
191	45.555517	-88.710203	Silver Lake	Forest	7/23/2014	BTB & CMC	191	18		Rope	SAMPLED			2										1	2									1					
192	45.555510	-88.709537	Silver Lake	Forest	7/23/2014	BTB & CMC	192	18		Rope	SAMPLED			2			11								1									1					
193	45.555502	-88.708871	Silver Lake	Forest	7/23/2014	BTB & CMC	193	19		Rope	SAMPLED			1											1									1					
194	45.555495	-88.708205	Silver Lake	Forest	7/23/2014	BTB & CMC	194	18		Rope	SAMPLED			1											1														
195	45.555487	-88.707539	Silver Lake	Forest	7/23/2014	BTB & CMC	195	19		Rope	SAMPLED			1											1														
196	45.555480	-88.706872	Silver Lake	Forest	7/23/2014	BTB & CMC	196	21		Rope	SAMPLED			1											1														
197	45.555472	-88.706206	Silver Lake	Forest	7/23/2014	BTB & CMC	197	21		Rope	SAMPLED			1											1														
198	45.555464	-88.705540	Silver Lake	Forest	7/23/2014	BTB & CMC	198	20		Rope	SAMPLED			1											1														
199	45.555457	-88.704874	Silver Lake	Forest	7/23/2014	BTB & CMC	199	21		Rope	SAMPLED			1			1																						
200	45.555449	-88.704208	Silver Lake	Forest	7/23/2014	BTB & CMC	200	20		Rope	SAMPLED			1											1														
201	45.555442	-88.703542	Silver Lake	Forest	7/23/2014	BTB & CMC	201	19		Rope	SAMPLED			2											2														
202	45.555434	-88.702876	Silver Lake	Forest	7/23/2014	BTB & CMC	202	17		Rope	SAMPLED			2			1							2	1									1					
203	45.555427	-88.702210	Silver Lake	Forest	7/23/2014	BTB & CMC	203	16	Muck	Pole	SAMPLED			1			1							1	1									1					
204	45.555419	-88.701544	Silver Lake	Forest	7/23/2014	BTB & CMC	204	15	Muck	Pole	SAMPLED			0																									

Point Number	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Lake Name	County	Date	Field Crew	Point Number	Depth (ft)	Sediment	Pole; Rope	Comments	Notes	Nuisance	TRF	Brasenia schreberi	Bidens beckii	Chara spp.	Eleocharis acicularis	Elodea canadensis	Isoetes spp.	Juncus pelocarpus	Myriophyllum tenellum	Najas flexilis	Najas guadalupensis	Nitella spp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton berchtoldii	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton natans	Potamogeton richardsonii	Potamogeton robbinsii	Ranunculus flammula	Sagittaria cristata	Sparganium angustifolium	Utricularia vulgaris	Vallisneria americana
205	45.555412	-88.700878	Silver Lake	Forest	7/23/2014	BTB & CMC	205	12	Muck	Pole	SAMPLED			2										1	1								1						2
206	45.555404	-88.700212	Silver Lake	Forest	7/23/2014	BTB & CMC	206	12	Muck	Pole	SAMPLED			1			1							1	1														1
207	45.555396	-88.699546	Silver Lake	Forest	7/22/2014	BTB & CMC	207	11	Muck	Pole	SAMPLED			2			1							1															2
208	45.555389	-88.698880	Silver Lake	Forest	7/22/2014	BTB & CMC	208	5	Sand	Pole	SAMPLED			1			1	1			1																	
209	45.556038	-88.714855	Silver Lake	Forest	7/23/2014	BTB & CMC	209	3	Sand	Pole	SAMPLED			2				1			1														1			
210	45.556030	-88.714189	Silver Lake	Forest	7/23/2014	BTB & CMC	210	7	Muck	Pole	SAMPLED			1										1	1								1	1				
211	45.556023	-88.713522	Silver Lake	Forest	7/23/2014	BTB & CMC	211	9	Muck	Pole	SAMPLED			1			1							1	1					1								
212	45.556015	-88.712856	Silver Lake	Forest	7/23/2014	BTB & CMC	212	9	Muck	Pole	SAMPLED			2			1							1	2									1				
213	45.556008	-88.71219	Silver Lake	Forest	7/23/2014	BTB & CMC	213	9	Muck	Pole	SAMPLED			1										1	1													
214	45.556	-88.711524	Silver Lake	Forest	7/23/2014	BTB & CMC	214	17		Rope	SAMPLED			2																			1	2				
215	45.555993	-88.710858	Silver Lake	Forest	7/23/2014	BTB & CMC	215	17		Rope	SAMPLED			2			2																	1				
216	45.555985	-88.710192	Silver Lake	Forest	7/23/2014	BTB & CMC	216	18		Rope	SAMPLED			2					1															1				
217	45.555978	-88.709526	Silver Lake	Forest	7/23/2014	BTB & CMC	217	18		Rope	SAMPLED			2			2								1													
218	45.55597	-88.70886	Silver Lake	Forest	7/23/2014	BTB & CMC	218	18		Rope	SAMPLED			1											1													
219	45.555963	-88.708194	Silver Lake	Forest	7/23/2014	BTB & CMC	219	20		Rope	SAMPLED			1											1													
220	45.555955	-88.707528	Silver Lake	Forest	7/23/2014	BTB & CMC	220	20		Rope	SAMPLED			1											1													
221	45.555948	-88.706862	Silver Lake	Forest	7/23/2014	BTB & CMC	221	20		Rope	SAMPLED			2			2																					
222	45.55594	-88.706196	Silver Lake	Forest	7/23/2014	BTB & CMC	222	20		Rope	SAMPLED			1											1													
223	45.555932	-88.70553	Silver Lake	Forest	7/23/2014	BTB & CMC	223	20		Rope	SAMPLED			1											1										1			
224	45.555925	-88.704863	Silver Lake	Forest	7/23/2014	BTB & CMC	224	19		Rope	SAMPLED			1											1													
225	45.555917	-88.704197	Silver Lake	Forest	7/23/2014	BTB & CMC	225	19		Rope	SAMPLED			2											2													
226	45.55591	-88.703531	Silver Lake	Forest	7/23/2014	BTB & CMC	226	18		Rope	SAMPLED			2											1										2			
227	45.555902	-88.702865	Silver Lake	Forest	7/23/2014	BTB & CMC	227	17		Rope	SAMPLED			2					1					1	1													
228	45.555895	-88.702199	Silver Lake	Forest	7/23/2014	BTB & CMC	228	15	Muck	Pole	SAMPLED			1										1	1													
229	45.555887	-88.701533	Silver Lake	Forest	7/22/2014	BTB & CMC	229	6	Sand	Pole	SAMPLED			1				1		1	1									1				1				
230	45.555879	-88.700867	Silver Lake	Forest	7/22/2014	BTB & CMC	230	5	Sand	Pole	SAMPLED			2			1			1	1											1		2				1
231	45.555872	-88.700201	Silver Lake	Forest	7/22/2014	BTB & CMC	231	5	Sand	Pole	SAMPLED			1																								1
232	45.555864	-88.699535	Silver Lake	Forest	7/22/2014	BTB & CMC	232	4	Sand	Pole	SAMPLED			1				1			1				1											1		1
233	45.556506	-88.714844	Silver Lake	Forest	7/22/2014	BTB & CMC	233	2	Sand	Pole	SAMPLED			1			1								1													
234	45.556498	-88.714178	Silver Lake	Forest	7/22/2014	BTB & CMC	234	8	Muck	Pole	SAMPLED			2										1											2				
235	45.556491	-88.713512	Silver Lake	Forest	7/22/2014	BTB & CMC	235	9	Muck	Pole	SAMPLED			0																									
236	45.556483	-88.712846	Silver Lake	Forest	7/22/2014	BTB & CMC	236	10	Muck	Pole	SAMPLED			0																									
237	45.556476	-88.71218	Silver Lake	Forest	7/22/2014	BTB & CMC	237	11	Muck	Pole	SAMPLED			2										2															
238	45.556468	-88.711514	Silver Lake	Forest	7/22/2014	BTB & CMC	238	17		Rope	SAMPLED			2										1											2				
239	45.556461	-88.710847	Silver Lake	Forest	7/22/2014	BTB & CMC	239	17		Rope	SAMPLED			1											1										1				
240	45.556453	-88.710181	Silver Lake	Forest	7/22/2014	BTB & CMC	240	17		Rope	SAMPLED			0																									
241	45.556446	-88.709515	Silver Lake	Forest	7/22/2014	BTB & CMC	241	19		Rope	SAMPLED			1			1								1													
242	45.556438	-88.708849	Silver Lake	Forest	7/22/2014	BTB & CMC	242	18		Rope	SAMPLED			1											1													
243	45.556431	-88.708183	Silver Lake	Forest	7/22/2014	BTB & CMC	243	20		Rope	SAMPLED			0																									
244	45.556423	-88.707517	Silver Lake	Forest	7/22/2014	BTB & CMC	244	21		Rope	SAMPLED			1											1													
245	45.556415	-88.706851	Silver Lake	Forest	7/22/2014	BTB & CMC	245	21		Rope	SAMPLED			1											1													
246	45.556408	-88.706185	Silver Lake	Forest	7/22/2014	BTB & CMC	246	20		Rope	SAMPLED			1											1													
247	45.5564	-88.705519	Silver Lake	Forest	7/22/2014	BTB & CMC	247	19		Rope	SAMPLED			2			1								1										2				
248	45.556393	-88.704853	Silver Lake	Forest	7/22/2014	BTB & CMC	248	20		Rope	SAMPLED			1											1													
249	45.556385	-88.704187	Silver Lake	Forest	7/22/2014	BTB & CMC	249	19		Rope	SAMPLED			2			1							1	1										2				
250	45.556378	-88.703521	Silver Lake	Forest	7/22/2014	BTB & CMC	250	15	Muck	Pole	SAMPLED			1			1							1	1										1				
251	45.55637	-88.702854	Silver Lake	Forest	7/22/2014	BTB & CMC	251	9	Muck	Pole	SAMPLED			1			1								1									1					1
252	45.556363	-88.702188	Silver Lake	Forest	7/22/2014	BTB & CMC	252	4	Sand	Pole	SAMPLED			1			1	1			1	1																
253	45.556974	-88.714833	Silver Lake	Forest	7/22/2014	BTB & CMC	253	0			TEMPORARY OBSTACLE																												
254	45.556966	-88.714167	Silver Lake	Forest	7/22/2014	BTB & CMC	254	7	Muck	Pole	SAMPLED			1										1															1
255	45.556959	-88.713501	Silver Lake	Forest	7/22/2014	BTB & CMC	255	10	Sand	Pole	SAMPLED			1											1													
256	45.556951	-88.712835	Silver Lake	Forest	7/22/2014	BTB & CMC	256	11	Muck	Pole	SAMPLED			2										1	1									2				
257	45.556944	-88.712169	Silver Lake	Forest	7/22/2014	BTB & CMC	257	11	Muck	Pole	SAMPLED			0																									
258	45.556936	-88.711503	Silver Lake	Forest	7/22/2014	BTB & CMC	258	17		Rope	SAMPLED			1											1													
259	45.556929	-88.710837	Silver Lake	Forest	7/22/2014	BTB & CMC	259	17		Rope	SAMPLED			1											1										1				
260	45.556921	-88.710171	Silver Lake	Forest	7/22/2014	BTB & CMC	260	19		Rope	SAMPLED			2											2										1				
261	45.556914	-88.709505	Silver Lake	Forest	7/22/2014	BTB & CMC	261	20		Rope	SAMPLED			2			2																					
262	45.556906	-88.708838	Silver Lake	Forest	7/22/2014	BTB & CMC	262	19		Rope	SAMPLED			1					1																1				
263	45.556898	-88.708172	Silver Lake	Forest	7/22/2014	BTB & CMC	263	20		Rope	SAMPLED			0																									
264	45.556891	-88.707506	Silver Lake	Forest	7/22/2014	BTB & CMC	264	21		Rope	SAMPLED			1			1																					
265	45.556883	-88.70684	Silver Lake	Forest	7/22/2014	BTB & CMC	265	21		Rope	SAMPLED			1											1													
266	45.556876	-88.706174	Silver Lake	Forest	7/22/2014	BTB & CMC	266	20		Rope	SAMPLED			1											1										1				
267	45.556868	-88.705508	Silver Lake	Forest	7/22/2014	BTB & CMC	267	20		Rope	SAMPLED			1											1													
268	45.556861	-88.704842	Silver Lake	Forest	7/22/2014	BTB & CMC	268	19		Rope	SAMPLED			1			1								1													
269	45.556853	-88.704176	Silver Lake	Forest	7/22/2014	BTB & CMC	269	17		Rope	SAMPLED			1										1														
270	45.556846	-88.70351	Silver Lake	Forest	7/22/2014	BTB & CMC	270	12	Muck	Pole	SAMPLED			1										1	1													1
271	45.556838	-88.702844	Silver Lake	Forest	7/22/2014	BTB & CMC	271	3	Rock	Pole	SAMPLED			0																									
272	45.557434	-88.714157	Silver Lake	Forest	7/22/2014	BTB & CMC	272	4	Sand	Pole	SAMPLED			1			1	1			1			1	1													1

Point Number	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Lake Name	County	Date	Field Crew	Point Number	Depth (ft)	Sediment	Pole; Rope	Comments	Notes	Nuisance	TRF	Brasenia schreberi	Bidens beckii	Chara spp.	Eleocharis acicularis	Elodea canadensis	Isoetes spp.	Juncus pelocarpus	Myriophyllum tenellum	Najas flexilis	Najas guadalupensis	Nitella spp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton berchtoldii	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton natans	Potamogeton richardsonii	Potamogeton robbinsii	Ranunculus flammula	Sagittaria cristata	Sparganium angustifolium	Utricularia vulgaris	Vallisneria americana
273	45.557427	-88.71349	Silver Lake	Forest	7/22/2014	BTB & CMC	273	9	Muck	Pole	SAMPLED			1			1							1															
274	45.557419	-88.712824	Silver Lake	Forest	7/22/2014	BTB & CMC	274	11	Sand	Pole	SAMPLED			1											1															
275	45.557412	-88.712158	Silver Lake	Forest	7/22/2014	BTB & CMC	275	14	Muck	Pole	SAMPLED			0																										
276	45.557404	-88.711492	Silver Lake	Forest	7/22/2014	BTB & CMC	276	15		Rope	SAMPLED			1										1											1					
277	45.557396	-88.710826	Silver Lake	Forest	7/22/2014	BTB & CMC	277	17		Rope	SAMPLED			0																										
278	45.557389	-88.71016	Silver Lake	Forest	7/22/2014	BTB & CMC	278	18		Rope	SAMPLED			2			2																		1					
279	45.557381	-88.709494	Silver Lake	Forest	7/22/2014	BTB & CMC	279	17		Rope	SAMPLED			2			2																							
280	45.557374	-88.708828	Silver Lake	Forest	7/22/2014	BTB & CMC	280	19		Rope	SAMPLED			1			1																							
281	45.557366	-88.708162	Silver Lake	Forest	7/22/2014	BTB & CMC	281	20		Rope	SAMPLED			1					1																					
282	45.557359	-88.707496	Silver Lake	Forest	7/22/2014	BTB & CMC	282	18		Rope	SAMPLED			2			1								1															
283	45.557351	-88.706829	Silver Lake	Forest	7/22/2014	BTB & CMC	283	19		Rope	SAMPLED			1			1								1															
284	45.557344	-88.706163	Silver Lake	Forest	7/22/2014	BTB & CMC	284	20		Rope	SAMPLED			1											1															
285	45.557336	-88.705497	Silver Lake	Forest	7/22/2014	BTB & CMC	285	20		Rope	SAMPLED			2											2											1					
286	45.557329	-88.704831	Silver Lake	Forest	7/22/2014	BTB & CMC	286	18		Rope	SAMPLED			0																										
287	45.557321	-88.704165	Silver Lake	Forest	7/22/2014	BTB & CMC	287	7	Rock	Pole	SAMPLED			0																										
288	45.557314	-88.703499	Silver Lake	Forest	7/22/2014	BTB & CMC	288	5	Sand	Pole	SAMPLED			1			1				1	1																	
289	45.557306	-88.702833	Silver Lake	Forest	7/22/2014	BTB & CMC	289	3	Sand	Pole	SAMPLED			1			1																							
290	45.557894	-88.71348	Silver Lake	Forest	7/22/2014	BTB & CMC	290	6	Sand	Pole	SAMPLED			2			1				2																			
291	45.557887	-88.712814	Silver Lake	Forest	7/22/2014	BTB & CMC	291	9	Sand	Pole	SAMPLED			2																	1									2
292	45.557879	-88.712148	Silver Lake	Forest	7/22/2014	BTB & CMC	292	11	Sand	Pole	SAMPLED			1										1	1														
293	45.557872	-88.711481	Silver Lake	Forest	7/22/2014	BTB & CMC	293	15	Muck	Pole	SAMPLED			1					1					1															
294	45.557864	-88.710815	Silver Lake	Forest	7/22/2014	BTB & CMC	294	17		Rope	SAMPLED			1										1	1										1					
295	45.557857	-88.710149	Silver Lake	Forest	7/22/2014	BTB & CMC	295	18		Rope	SAMPLED			2											1										2					
296	45.557849	-88.709483	Silver Lake	Forest	7/22/2014	BTB & CMC	296	18		Rope	SAMPLED			2			2																							
297	45.557842	-88.708817	Silver Lake	Forest	7/22/2014	BTB & CMC	297	19		Rope	SAMPLED			2			2																							
298	45.557834	-88.708151	Silver Lake	Forest	7/22/2014	BTB & CMC	298	19		Rope	SAMPLED			2			1								1										2					
299	45.557827	-88.707485	Silver Lake	Forest	7/22/2014	BTB & CMC	299	19		Rope	SAMPLED			2			1								1										1					
300	45.557819	-88.706819	Silver Lake	Forest	7/22/2014	BTB & CMC	300	20		Rope	SAMPLED			2			2																							
301	45.557812	-88.706153	Silver Lake	Forest	7/22/2014	BTB & CMC	301	21		Rope	SAMPLED			1											1															
302	45.557804	-88.705487	Silver Lake	Forest	7/22/2014	BTB & CMC	302	21		Rope	SAMPLED			1											1															
303	45.557797	-88.70482	Silver Lake	Forest	7/22/2014	BTB & CMC	303	19		Rope	SAMPLED			1										1	1															
304	45.557789	-88.704154	Silver Lake	Forest	7/22/2014	BTB & CMC	304	12	Sand	Pole	SAMPLED			2										2	1															1
305	45.557781	-88.703488	Silver Lake	Forest	7/22/2014	BTB & CMC	305	8	Sand	Pole	SAMPLED			1			1																							
306	45.557774	-88.702822	Silver Lake	Forest	7/22/2014	BTB & CMC	306	4	Sand	Pole	SAMPLED			1							1	1																	
307	45.558355	-88.712803	Silver Lake	Forest	7/22/2014	BTB & CMC	307	9	Sand	Pole	SAMPLED			1										1											1					
308	45.558347	-88.712137	Silver Lake	Forest	7/22/2014	BTB & CMC	308	12	Sand	Pole	SAMPLED			1										1	1															
309	45.55834	-88.711471	Silver Lake	Forest	7/22/2014	BTB & CMC	309	14	Muck	Pole	SAMPLED			2										2	1									1	1					
310	45.558332	-88.710805	Silver Lake	Forest	7/22/2014	BTB & CMC	310	15		Rope	SAMPLED			2											1										2					
311	45.558325	-88.710139	Silver Lake	Forest	7/22/2014	BTB & CMC	311	19		Rope	SAMPLED			2			2																							
312	45.558317	-88.709472	Silver Lake	Forest	7/22/2014	BTB & CMC	312	18		Rope	SAMPLED			2			2		1																					
313	45.55831	-88.708806	Silver Lake	Forest	7/22/2014	BTB & CMC	313	19		Rope	SAMPLED			1			1																			1					
314	45.558302	-88.70814	Silver Lake	Forest	7/22/2014	BTB & CMC	314	18		Rope	SAMPLED			1											1							1								
315	45.558295	-88.707474	Silver Lake	Forest	7/22/2014	BTB & CMC	315	20		Rope	SAMPLED			0																										
316	45.558287	-88.706808	Silver Lake	Forest	7/22/2014	BTB & CMC	316	20		Rope	SAMPLED			1											1															
317	45.55828	-88.706142	Silver Lake	Forest	7/22/2014	BTB & CMC	317	20		Rope	SAMPLED			0																										
318	45.558272	-88.705476	Silver Lake	Forest	7/22/2014	BTB & CMC	318	20		Rope	SAMPLED			1											1															
319	45.558265	-88.70481	Silver Lake	Forest	7/22/2014	BTB & CMC	319	18		Rope	SAMPLED			1			1																							
320	45.558257	-88.704144	Silver Lake	Forest	7/22/2014	BTB & CMC	320	18		Rope	SAMPLED			1										1	1											1				
321	45.558249	-88.703478	Silver Lake	Forest	7/22/2014	BTB & CMC	321	11	Sand	Pole	SAMPLED			2										1	1						1								
322	45.558242	-88.702811	Silver Lake	Forest	7/22/2014	BTB & CMC	322	8	Rock	Pole	SAMPLED			1			1																							
323	45.558823	-88.712792	Silver Lake	Forest	7/22/2014	BTB & CMC	323	7	Sand	Pole	SAMPLED			1			1																							
324	45.558815	-88.712126	Silver Lake	Forest	7/22/2014	BTB & CMC	324	11	Sand	Pole	SAMPLED			1											1							1								
325	45.558808	-88.71146	Silver Lake	Forest	7/22/2014	BTB & CMC	325	12	Muck	Pole	SAMPLED			1											1															
326	45.5588	-88.710794	Silver Lake	Forest	7/22/2014	BTB & CMC	326	14		Rope	SAMPLED			1																						1					
327	45.558793	-88.710128	Silver Lake	Forest	7/22/2014	BTB & CMC	327	15		Rope	SAMPLED			1					1						1										1					
328	45.558785	-88.709462	Silver Lake	Forest	7/22/2014	BTB & CMC	328	17		Rope	SAMPLED			1			1																							
329	45.558778	-88.708796	Silver Lake	Forest	7/22/2014	BTB & CMC	329	18		Rope	SAMPLED			2			2																							
330	45.55877	-88.70813	Silver Lake	Forest	7/22/2014	BTB & CMC	330	17		Rope	SAMPLED			1											1															
331	45.558763	-88.707463	Silver Lake	Forest	7/22/2014	BTB & CMC	331	20		Rope	SAMPLED			1											1															
332	45.558755	-88.706797	Silver Lake	Forest	7/22/2014	BTB & CMC	332	20		Rope	SAMPLED			1			1		1						1															
333	45.558748	-88.706131	Silver Lake	Forest	7/22/2014	BTB & CMC	333	19		Rope	SAMPLED			1			1																			1					
334	45.55874	-88.705465	Silver Lake	Forest	7/22/2014	BTB & CMC	334	20		Rope	SAMPLED			2			2																							
335	45.558732	-88.704799	Silver Lake	Forest	7/22/2014	BTB & CMC	335	19		Rope	SAMPLED			1											1															
336	45.558725	-88.704133	Silver Lake	Forest	7/22/2014	BTB & CMC	336	17		Rope	SAMPLED			2											2															
337	45.558717	-88.703467	Silver Lake	Forest	7/22/2014	BTB & CMC	337	16		Rope	SAMPLED			1										1	1															
338	45.55871	-88.702801	Silver Lake	Forest	7/22/2014	BTB & CMC	338	14	Muck	Pole	SAMPLED			2																						2					
339	45.558702	-88.702135	Silver Lake	Forest	7/22/2014	BTB & CMC	339	7	Sand	Pole	SAMPLED			2										1	1						1									2
340	45.559291	-88.712782	Silver Lake	Forest	7/22/2014	BTB & CMC	340	2	Sand	Pole	SAMPLED			1			1																							

Point Number	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Lake Name	County	Date	Field Crew	Point Number	Depth (ft)	Sediment	Pole; Rope	Comments	Notes	Nuisance	TRF	Brasenia schreberi	Bidens beckii	Chara spp.	Eleocharis acicularis	Elodea canadensis	Isoetes spp.	Juncus pelocarpus	Myriophyllum tenellum	Najas flexilis	Najas guadalupensis	Nitella spp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton berchtoldii	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton natans	Potamogeton richardsonii	Potamogeton robbinsii	Ranunculus flammula	Sagittaria cristata	Sparganium angustifolium	Utricularia vulgaris	Vallisneria americana
341	45.559283	-88.712115	Silver Lake	Forest	7/22/2014	BTB & CMC	341	10	Sand	Pole	SAMPLED			1											1								1						1
342	45.559276	-88.711449	Silver Lake	Forest	7/22/2014	BTB & CMC	342	12	Muck	Pole	SAMPLED			0																									
343	45.559268	-88.710783	Silver Lake	Forest	7/22/2014	BTB & CMC	343	10	Muck	Pole	SAMPLED			2										1										2					
344	45.559261	-88.710117	Silver Lake	Forest	7/22/2014	BTB & CMC	344	14	Muck	Pole	SAMPLED			1					1															1					
345	45.559253	-88.709451	Silver Lake	Forest	7/22/2014	BTB & CMC	345	17		Rope	SAMPLED			2			2																						
346	45.559246	-88.708785	Silver Lake	Forest	7/22/2014	BTB & CMC	346	19		Rope	SAMPLED			2			2																						
347	45.559238	-88.708119	Silver Lake	Forest	7/22/2014	BTB & CMC	347	18		Rope	SAMPLED			2			2																						
348	45.559231	-88.707453	Silver Lake	Forest	7/22/2014	BTB & CMC	348	19		Rope	SAMPLED			2											1										2					
349	45.559223	-88.706787	Silver Lake	Forest	7/22/2014	BTB & CMC	349	19		Rope	SAMPLED			1																					1					
350	45.559216	-88.70612	Silver Lake	Forest	7/22/2014	BTB & CMC	350	19		Rope	SAMPLED			1																					1					
351	45.559208	-88.705454	Silver Lake	Forest	7/22/2014	BTB & CMC	351	18		Rope	SAMPLED			3			3								1										1					
352	45.5592	-88.704788	Silver Lake	Forest	7/22/2014	BTB & CMC	352	18		Rope	SAMPLED			1			1								1															
353	45.559193	-88.704122	Silver Lake	Forest	7/22/2014	BTB & CMC	353	16		Rope	SAMPLED			1											1															
354	45.559185	-88.703456	Silver Lake	Forest	7/22/2014	BTB & CMC	354	16		Rope	SAMPLED			2			1							2	1														
355	45.559178	-88.70279	Silver Lake	Forest	7/22/2014	BTB & CMC	355	12	Muck	Pole	SAMPLED			2											1															2
356	45.55917	-88.702124	Silver Lake	Forest	7/22/2014	BTB & CMC	356	0			SWIM AREA																												
357	45.559751	-88.712105	Silver Lake	Forest	7/22/2014	BTB & CMC	357	9	Muck	Pole	SAMPLED			1									1																
358	45.559744	-88.711439	Silver Lake	Forest	7/22/2014	BTB & CMC	358	10	Muck	Pole	SAMPLED			2										1	1														
359	45.559736	-88.710773	Silver Lake	Forest	7/22/2014	BTB & CMC	359	11	Muck	Pole	SAMPLED			1										1	1														
360	45.559729	-88.710106	Silver Lake	Forest	7/22/2014	BTB & CMC	360	15		Rope	SAMPLED			1										1	1										1				
361	45.559721	-88.70944	Silver Lake	Forest	7/22/2014	BTB & CMC	361	16		Rope	SAMPLED			2			2																		1				
362	45.559714	-88.708774	Silver Lake	Forest	7/22/2014	BTB & CMC	362	17		Rope	SAMPLED			1			1																		1				
363	45.559706	-88.708108	Silver Lake	Forest	7/22/2014	BTB & CMC	363	19		Rope	SAMPLED			0																									
364	45.559699	-88.707442	Silver Lake	Forest	7/22/2014	BTB & CMC	364	19		Rope	SAMPLED			1											1														
365	45.559691	-88.706776	Silver Lake	Forest	7/22/2014	BTB & CMC	365	19		Rope	SAMPLED			2											2														
366	45.559683	-88.70611	Silver Lake	Forest	7/22/2014	BTB & CMC	366	19		Rope	SAMPLED			2			2																						
367	45.559676	-88.705444	Silver Lake	Forest	7/22/2014	BTB & CMC	367	17		Rope	SAMPLED			2					1						2										1				
368	45.559668	-88.704777	Silver Lake	Forest	7/22/2014	BTB & CMC	368	15		Rope	SAMPLED			2										1	2										1				
369	45.559661	-88.704111	Silver Lake	Forest	7/22/2014	BTB & CMC	369	13	Muck	Pole	SAMPLED			1										1	1														
370	45.559653	-88.703445	Silver Lake	Forest	7/22/2014	BTB & CMC	370	14	Muck	Pole	SAMPLED			1										1	1							1							
371	45.559646	-88.702779	Silver Lake	Forest	7/22/2014	BTB & CMC	371	10	Sand	Pole	SAMPLED			1										1															
372	45.560219	-88.712094	Silver Lake	Forest	7/22/2014	BTB & CMC	372	9	Muck	Pole	SAMPLED			1											1														
373	45.560212	-88.711428	Silver Lake	Forest	7/22/2014	BTB & CMC	373	11	Muck	Pole	SAMPLED			1			1														1								
374	45.560204	-88.710762	Silver Lake	Forest	7/22/2014	BTB & CMC	374	10	Muck	Pole	SAMPLED			2										1											2				
375	45.560197	-88.710096	Silver Lake	Forest	7/22/2014	BTB & CMC	375	15	Muck	Pole	SAMPLED			1										1	1														
376	45.560189	-88.70943	Silver Lake	Forest	7/22/2014	BTB & CMC	376	17		Rope	SAMPLED			1			1		1					1											1				
377	45.560182	-88.708763	Silver Lake	Forest	7/22/2014	BTB & CMC	377	16		Rope	SAMPLED			2			1								1										2				
378	45.560174	-88.708097	Silver Lake	Forest	7/22/2014	BTB & CMC	378	18		Rope	SAMPLED			1			1								1														
379	45.560166	-88.707431	Silver Lake	Forest	7/22/2014	BTB & CMC	379	20		Rope	SAMPLED			2																					2				
380	45.560159	-88.706765	Silver Lake	Forest	7/22/2014	BTB & CMC	380	18		Rope	SAMPLED			1										1	1										1				
381	45.560151	-88.706099	Silver Lake	Forest	7/22/2014	BTB & CMC	381	16		Rope	SAMPLED			2			1							1								1			2				
382	45.560144	-88.705433	Silver Lake	Forest	7/22/2014	BTB & CMC	382	15	Muck	Pole	SAMPLED			1										1											1				
383	45.560136	-88.704767	Silver Lake	Forest	7/22/2014	BTB & CMC	383	14	Muck	Pole	SAMPLED			1																					1				
384	45.560129	-88.704101	Silver Lake	Forest	7/22/2014	BTB & CMC	384	13	Muck	Pole	SAMPLED			2																				1	2				
385	45.560121	-88.703434	Silver Lake	Forest	7/22/2014	BTB & CMC	385	10	Muck	Pole	SAMPLED			2										1	1					1			1						2
386	45.560114	-88.702768	Silver Lake	Forest	7/22/2014	BTB & CMC	386	6	Sand	Pole	SAMPLED			1				1			1			1							1							
387	45.560687	-88.712083	Silver Lake	Forest	7/22/2014	BTB & CMC	387	4	Sand	Pole	SAMPLED			1				1		1	1																		1
388	45.56068	-88.711417	Silver Lake	Forest	7/22/2014	BTB & CMC	388	10	Muck	Pole	SAMPLED			1										1	1														
389	45.560672	-88.710751	Silver Lake	Forest	7/22/2014	BTB & CMC	389	11	Muck	Pole	SAMPLED			0																									
390	45.560665	-88.710085	Silver Lake	Forest	7/22/2014	BTB & CMC	390	12	Muck	Pole	SAMPLED			0																									
391	45.560657	-88.709419	Silver Lake	Forest	7/22/2014	BTB & CMC	391	16		Rope	SAMPLED			1										1	1														
392	45.560649	-88.708753	Silver Lake	Forest	7/22/2014	BTB & CMC	392	17		Rope	SAMPLED			2			2							1	1							1							
393	45.560642	-88.708087	Silver Lake	Forest	7/22/2014	BTB & CMC	393	17		Pole	SAMPLED			1										1	1														
394	45.560634	-88.70742	Silver Lake	Forest	7/22/2014	BTB & CMC	394	16		Rope	SAMPLED			1											1														
395	45.560627	-88.706754	Silver Lake	Forest	7/22/2014	BTB & CMC	395	11	Sand	Pole	SAMPLED			2										1	1					1			1						1
396	45.560619	-88.706088	Silver Lake	Forest	7/22/2014	BTB & CMC	396	15		Rope	SAMPLED			1										1															
397	45.560612	-88.705422	Silver Lake	Forest	7/22/2014	BTB & CMC	397	15		Rope	SAMPLED			1										1	1										1				
398	45.560604	-88.704756	Silver Lake	Forest	7/22/2014	BTB & CMC	398	13	Muck	Pole	SAMPLED			2										1	1								1	1					2
399	45.560597	-88.70409	Silver Lake	Forest	7/22/2014	BTB & CMC	399	9	Sand	Pole	SAMPLED			0																									
400	45.560589	-88.703424	Silver Lake	Forest	7/22/2014	BTB & CMC	400	3	Sand	Pole	SAMPLED			1			1				1	1														1			
401	45.561155	-88.712073	Silver Lake	Forest	7/22/2014	BTB & CMC	401	2	Sand	Pole	SAMPLED			1				1						1															1
402	45.561147	-88.711407	Silver Lake	Forest	7/22/2014	BTB & CMC	402	10	Muck	Pole	SAMPLED			0																									
403	45.56114	-88.71074	Silver Lake	Forest	7/22/2014	BTB & CMC	403	10	Muck	Pole	SAMPLED			1					1					1											1				
404	45.561132	-88.710074	Silver Lake	Forest	7/22/2014	BTB & CMC	404	13	Muck	Pole	SAMPLED			0																									
405	45.561125	-88.709408	Silver Lake	Forest	7/22/2014	BTB & CMC	405	16		Pole	SAMPLED			1										1										1					
406	45.561117	-88.708742	Silver Lake	Forest	7/22/2014	BTB & CMC	406	15		Rope	SAMPLED			1			1							1															
407	45.56111	-88.708076	Silver Lake	Forest	7/22/2014	BTB & CMC	407	14	Sand	Pole	SAMPLED			1										1															
408	45.561102	-88.70741	Silver Lake	Forest	7/22/2014	BTB & CMC	408	13	Sand	Pole	SAMPLED			0																									

Point Number	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Lake Name	County	Date	Field Crew	Point Number	Depth (ft)	Sediment	Pole; Rope	Comments	Notes	Nuisance	TRF	Brasenia schreberi	Bidens beckii	Chara spp.	Eleocharis acicularis	Elodea canadensis	Isoetes spp.	Juncus pelocarpus	Myriophyllum tenellum	Najas flexilis	Najas guadalupensis	Nitella spp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton berchtoldii	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton natans	Potamogeton richardsonii	Potamogeton robbinsii	Ranunculus flammula	Sagittaria cristata	Sparganium angustifolium	Utricularia vulgaris	Vallisneria americana
409	45.561095	-88.706744	Silver Lake	Forest	7/22/2014	BTB & CMC	409	10	Sand	Pole	SAMPLED			0																									
410	45.561087	-88.706077	Silver Lake	Forest	7/22/2014	BTB & CMC	410	12	Sand	Pole	SAMPLED			2			1							2															
411	45.56108	-88.705411	Silver Lake	Forest	7/22/2014	BTB & CMC	411	13	Sand	Pole	SAMPLED			1			1							1							1								
412	45.561072	-88.704745	Silver Lake	Forest	7/22/2014	BTB & CMC	412	8	Sand	Pole	SAMPLED			1																									
413	45.561065	-88.704079	Silver Lake	Forest	7/22/2014	BTB & CMC	413	2	Sand	Pole	SAMPLED			0																									
414	45.561623	-88.712062	Silver Lake	Forest	7/22/2014	BTB & CMC	414	3	Sand	Pole	SAMPLED			1			1			1	1	1																	
415	45.561615	-88.711396	Silver Lake	Forest	7/22/2014	BTB & CMC	415	8	Muck	Pole	SAMPLED			1			1							1	1			1					1					
416	45.561608	-88.71073	Silver Lake	Forest	7/22/2014	BTB & CMC	416	10	Muck	Pole	SAMPLED			1			1							1						1								
417	45.5616	-88.710064	Silver Lake	Forest	7/22/2014	BTB & CMC	417	10	Muck	Pole	SAMPLED			1										1	1									1				
418	45.561593	-88.709397	Silver Lake	Forest	7/22/2014	BTB & CMC	418	11	Muck	Pole	SAMPLED			1			1							1														
419	45.561585	-88.708731	Silver Lake	Forest	7/22/2014	BTB & CMC	419	12	Muck	Pole	SAMPLED			1																					1				
420	45.561578	-88.708065	Silver Lake	Forest	7/22/2014	BTB & CMC	420	15	Muck	Pole	SAMPLED			1										1	1													
421	45.56157	-88.707399	Silver Lake	Forest	7/22/2014	BTB & CMC	421	13	Sand	Pole	SAMPLED			1										1	1									1				
422	45.561563	-88.706733	Silver Lake	Forest	7/22/2014	BTB & CMC	422	13	Sand	Pole	SAMPLED			1										1	1						1							
423	45.561555	-88.706067	Silver Lake	Forest	7/22/2014	BTB & CMC	423	12	Muck	Pole	SAMPLED			0																									
424	45.561548	-88.705401	Silver Lake	Forest	7/22/2014	BTB & CMC	424	11	Muck	Pole	SAMPLED			1										1															
425	45.56154	-88.704734	Silver Lake	Forest	7/22/2014	BTB & CMC	425	7	Sand	Pole	SAMPLED			1			1																					
426	45.562091	-88.712051	Silver Lake	Forest	7/22/2014	BTB & CMC	426	6	Sand	Pole	SAMPLED			1			1						1															1
427	45.562083	-88.711385	Silver Lake	Forest	7/22/2014	BTB & CMC	427	8	Muck	Pole	SAMPLED			1			1							1	1						1							
428	45.562076	-88.710719	Silver Lake	Forest	7/22/2014	BTB & CMC	428	10	Muck	Pole	SAMPLED			0																									
429	45.562068	-88.710053	Silver Lake	Forest	7/22/2014	BTB & CMC	429	10	Muck	Pole	SAMPLED			1			1							1															
430	45.562061	-88.709387	Silver Lake	Forest	7/22/2014	BTB & CMC	430	10	Muck	Pole	SAMPLED			1										1	1													
431	45.562053	-88.708721	Silver Lake	Forest	7/22/2014	BTB & CMC	431	12	Muck	Pole	SAMPLED			2										2	1													
432	45.562046	-88.708054	Silver Lake	Forest	7/22/2014	BTB & CMC	432	12	Muck	Pole	SAMPLED			0																									
433	45.562038	-88.707388	Silver Lake	Forest	7/22/2014	BTB & CMC	433	13	Muck	Pole	SAMPLED			1										1	1										1			
434	45.562031	-88.706722	Silver Lake	Forest	7/22/2014	BTB & CMC	434	13	Muck	Pole	SAMPLED			0																									
435	45.562023	-88.706056	Silver Lake	Forest	7/22/2014	BTB & CMC	435	14	Muck	Pole	SAMPLED			1										1	1										1			
436	45.562016	-88.70539	Silver Lake	Forest	7/22/2014	BTB & CMC	436	10	Muck	Pole	SAMPLED			2										1										2				1
437	45.562008	-88.704724	Silver Lake	Forest	7/22/2014	BTB & CMC	437	3	Muck	Pole	SAMPLED			0																									
438	45.562559	-88.712041	Silver Lake	Forest	7/22/2014	BTB & CMC	438	6	Muck	Pole	SAMPLED			2										1											2			
439	45.562551	-88.711374	Silver Lake	Forest	7/22/2014	BTB & CMC	439	8	Muck	Pole	SAMPLED			2			1							1	1			1					1					
440	45.562544	-88.710708	Silver Lake	Forest	7/22/2014	BTB & CMC	440	10	Muck	Pole	SAMPLED			1			1																					
441	45.562536	-88.710042	Silver Lake	Forest	7/22/2014	BTB & CMC	441	9	Muck	Pole	SAMPLED			2			2													1								
442	45.562529	-88.709376	Silver Lake	Forest	7/22/2014	BTB & CMC	442	10	Muck	Pole	SAMPLED			1			1							1														
443	45.562521	-88.70871	Silver Lake	Forest	7/22/2014	BTB & CMC	443	8	Muck	Pole	SAMPLED			1			1							1	1													1
444	45.562514	-88.708044	Silver Lake	Forest	7/22/2014	BTB & CMC	444	14	Muck	Pole	SAMPLED			1			1		1												1							
445	45.562506	-88.707378	Silver Lake	Forest	7/22/2014	BTB & CMC	445	11	Muck	Pole	SAMPLED			1			1							1	1													
446	45.562499	-88.706711	Silver Lake	Forest	7/22/2014	BTB & CMC	446	11	Muck	Pole	SAMPLED			1			1							1	1													1
447	45.562491	-88.706045	Silver Lake	Forest	7/22/2014	BTB & CMC	447	11	Muck	Pole	SAMPLED			11										1	1													
448	45.562484	-88.705379	Silver Lake	Forest	7/22/2014	BTB & CMC	448	9	Muck	Pole	SAMPLED			1			1							1	1									1				
449	45.563027	-88.71203	Silver Lake	Forest	7/22/2014	BTB & CMC	449	6	Muck	Pole	SAMPLED			1																1					1			
450	45.563019	-88.711364	Silver Lake	Forest	7/22/2014	BTB & CMC	450	8	Muck	Pole	SAMPLED			1			1							1	1					1								
451	45.563012	-88.710698	Silver Lake	Forest	7/22/2014	BTB & CMC	451	9	Muck	Pole	SAMPLED			1			1																	1				
452	45.563004	-88.710031	Silver Lake	Forest	7/22/2014	BTB & CMC	452	10	Muck	Pole	SAMPLED			1										1														
453	45.562997	-88.709365	Silver Lake	Forest	7/22/2014	BTB & CMC	453	11	Muck	Pole	SAMPLED			1			1							1	1										1			
454	45.562989	-88.708699	Silver Lake	Forest	7/22/2014	BTB & CMC	454	11	Muck	Pole	SAMPLED			0																									
455	45.562982	-88.708033	Silver Lake	Forest	7/22/2014	BTB & CMC	455	12	Muck	Pole	SAMPLED			1			1							1	1													
456	45.562974	-88.707367	Silver Lake	Forest	7/22/2014	BTB & CMC	456	11	Muck	Pole	SAMPLED			1										1	1										1			
457	45.562967	-88.706701	Silver Lake	Forest	7/22/2014	BTB & CMC	457	10	Muck	Pole	SAMPLED			1										1	1										1			
458	45.562959	-88.706034	Silver Lake	Forest	7/22/2014	BTB & CMC	458	10	Muck	Pole	SAMPLED			1										1	1													
459	45.562951	-88.705368	Silver Lake	Forest	7/22/2014	BTB & CMC	459	8	Muck	Pole	SAMPLED			1										1	1									1	1			1
460	45.563495	-88.712019	Silver Lake	Forest	7/22/2014	BTB & CMC	460	6	Muck	Pole	SAMPLED			2				1						1										1			1
461	45.563487	-88.711353	Silver Lake	Forest	7/22/2014	BTB & CMC	461	7	Muck	Pole	SAMPLED			1										1	1			1										
462	45.56348	-88.710687	Silver Lake	Forest	7/22/2014	BTB & CMC	462	8	Muck	Pole	SAMPLED			1			1								1					1								
463	45.563472	-88.710021	Silver Lake	Forest	7/22/2014	BTB & CMC	463	9	Muck	Pole	SAMPLED			1			1								1													
464	45.563465	-88.709355	Silver Lake	Forest	7/22/2014	BTB & CMC	464	9	Muck	Pole	SAMPLED			1										1	1									1	1			
465	45.563457	-88.708688	Silver Lake	Forest	7/22/2014	BTB & CMC	465	10	Muck	Pole	SAMPLED			2			1							2	1													
466	45.56345	-88.708022	Silver Lake	Forest	7/22/2014	BTB & CMC	466	10	Muck	Pole	SAMPLED			2										1	1						1							
467	45.563442	-88.707356	Silver Lake	Forest	7/22/2014	BTB & CMC	467	10	Muck	Pole	SAMPLED			2										1	1			1					1	1				
468	45.563434	-88.70669	Silver Lake	Forest	7/22/2014	BTB & CMC	468	8	Muck	Pole	SAMPLED			1										1	1			1						1				
469	45.563427	-88.706024	Silver Lake	Forest	7/22/2014	BTB & CMC	469	9	Muck	Pole	SAMPLED			1			1								1										1			
470	45.563419	-88.705358	Silver Lake	Forest	7/22/2014	BTB & CMC	470	4	Sand	Pole	SAMPLED			2				1			2																
471	45.563955	-88.711342	Silver Lake	Forest	7/22/2014	BTB & CMC	471	3	Sand	Pole	SAMPLED			2								1														1		
472	45.563948	-88.710676	Silver Lake	Forest	7/22/2014	BTB & CMC	472	6	Muck	Pole	SAMPLED			1											1										1			
473	45.56394	-88.71001	Silver Lake	Forest	7/22/2014	BTB & CMC	473	7	Muck	Pole	SAMPLED			1				1							1					1					1			
474	45.563933	-88.709344	Silver Lake	Forest	7/22/2014	BTB & CMC	474	8	Muck	Pole	SAMPLED			1			1							1	1													
475	45.563925	-88.708678	Silver Lake	Forest	7/22/2014	BTB & CMC	475	8	Muck	Pole	SAMPLED			1											1					1					1			
476	45.563917	-88.708012	Silver Lake	Forest	7/22/2014	BTB & CMC	476	9	Muck	Pole	SAMPLED			1			1							1					1									

Point Number	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Lake Name	County	Date	Field Crew	Point Number	Depth (ft)	Sediment	Pole; Rope	Comments	Notes	Nuisance	TRF	Brasenia schreberi	Bidens beckii	Chara spp.	Eleocharis acicularis	Elodea canadensis	Isoetes spp.	Juncus pelocarpus	Myriophyllum tenellum	Najas flexilis	Najas guadalupensis	Nitella spp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton berchtoldii	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton natans	Potamogeton richardsonii	Potamogeton robbinsii	Ranunculus flammula	Sagittaria cristata	Sparganium angustifolium	Utricularia vulgaris	Vallisneria americana
477	45.56391	-88.707345	Silver Lake	Forest	7/22/2014	BTB & CMC	477	8	Muck	Pole	SAMPLED			2			2							1	1														1
478	45.563902	-88.706679	Silver Lake	Forest	7/22/2014	BTB & CMC	478	6	Muck	Pole	SAMPLED			2				1			1									1				1				1
479	45.563895	-88.706013	Silver Lake	Forest	7/22/2014	BTB & CMC	479	1	Sand	Pole	SAMPLED			1											1								1						1