A

APPENDIX A

Public Participation Materials

Lac Vieux Desert
Comprehensive Management Plan
Project Kick-Off Meeting
June 27, 2009 9:30 am
Stateline Restaurant and Catering, Land O' Lakes, WI

In 2008 the presence of Eurasian water milfoil was verified by the Wisconsin Department of Natural Resources (WDNR) after it was located by members of the Watersmeet, MI Invasive Species Control Coalition. Subsequent data was collected by the Great Lakes Indian Fish and Wildlife Commission. As a result of that finding, the Lac Vieux Desert Lake Association (LVDLA) received an Aquatic Invasive Species (AIS) Early Detection and Rapid Response Grant from the WDNR to target the pioneer infestation.

Aquatic ecologist, Eddie Heath, speaks to a lake group in Lincoln County about their lake management plan. Public participation will be integral part of the Phillips Chain of Lakes project.

Although Eurasian water milfoil management is in the forefront of the association's minds, the LVDLA recognizes the importance of understanding the Lac Vieux Desert ecosystem as a whole to ensure current management actions are properly coordinated and all management alternatives are fully understood. With that said, the LVDLA has successfully applied for grant money from the WDNR to pay for 75% of the completion of a comprehensive management plan for Lac Vieux Desert. The design for the management plan has been finalized and approved by the WDNR and includes two primary objectives: 1) the completion of an in-depth study including multiple plant surveys, water quality sampling, and watershed investigations; 2) the completion of a realistic management plan for the lake and its watershed.

Most of the studies will be completed during this spring, summer and fall. The tasks associated with the analysis of the data will be completed during the fall and winter. The project will also incorporate opportunities for stakeholder education and input, which are both very important components of all lake management planning efforts. The first opportunity for your participation in the process will be at the Project Kick-off Meeting to be held on Saturday, June 27th at 9:30 am at Stateline Restaurant and Catering.

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

Presentation Outline

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

Onterra, LLC

- Founded in 2005
- Staff
  - Three full-time ecologists
  - Two part-time ecologists
  - Two interns
- Services
  - Science and planning
- Philosophy
  - Promote realistic planning
  - Assist, not direct

Why create a lake management plan?

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

Elements of an Effective Lake Management Planning Project

Data and Information Gathering

Environmental & Sociological

Planning Process

Brings it all together

Data and information gathering

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

Water Quality Analysis

- General water chemistry
- Nutrient analysis
  - Lake trophic state (Eutrophication)
  - Limiting plant nutrient
- Supporting data for watershed modeling

Watershed Assessment

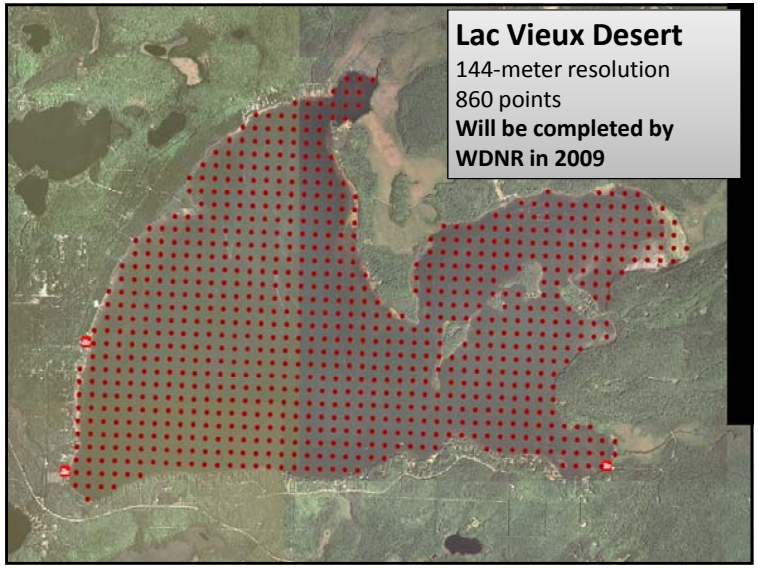
- Delineation of drainage basin
- Modeling
  - Land cover
  - Phosphorus loading
  - Scenario development

Non-native Aquatic Plants

Curly-leaf Pondweed

Non-native Aquatic Plants

Eurasian Water Milfoil



Aquatic Plant Surveys

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

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

Stakeholder Survey

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

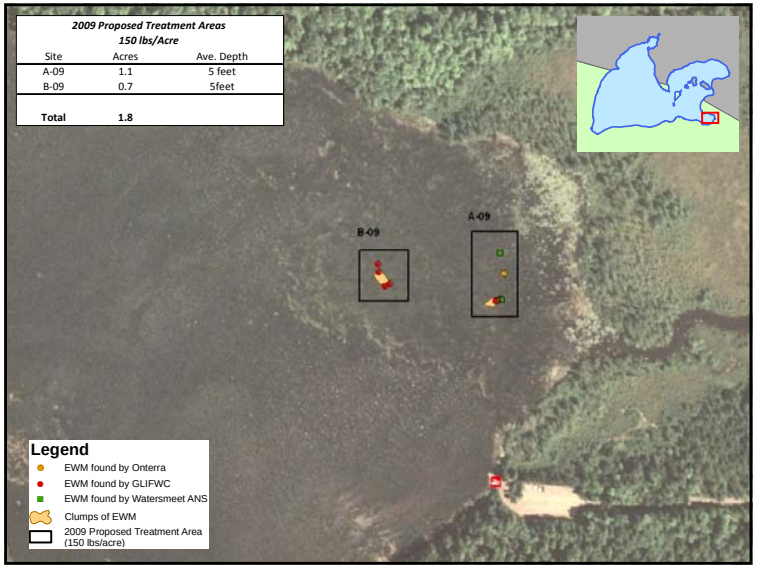
Planning Process

Planning Committee Meetings

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

↓

Implementation Plan



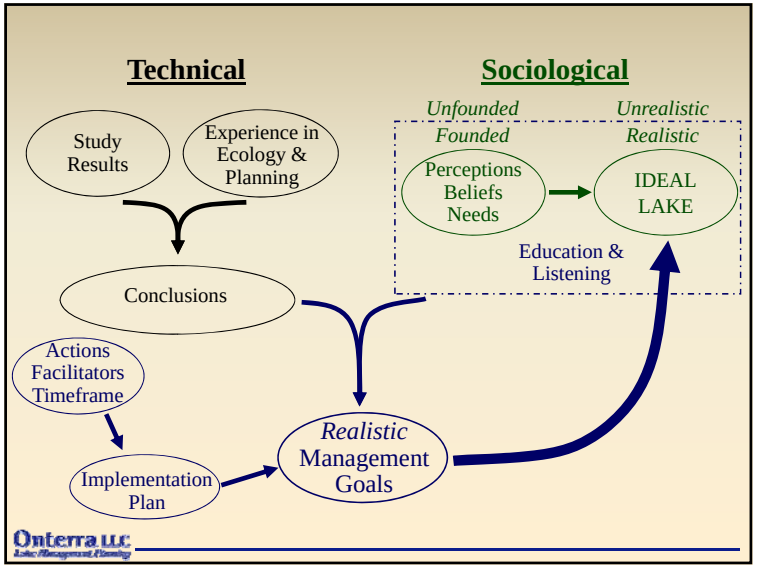
Thank You

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

Wisconsin Lakes Partnership

UW Extension

Wisconsin Dept. of Natural Resources



Lac Vieux Desert Lake Association

Lac Vieux Desert
Management Planning Project
Planning Meeting I
August 18, 2010

Tim Hoyman
Onterra LLC
Lake Management Planning

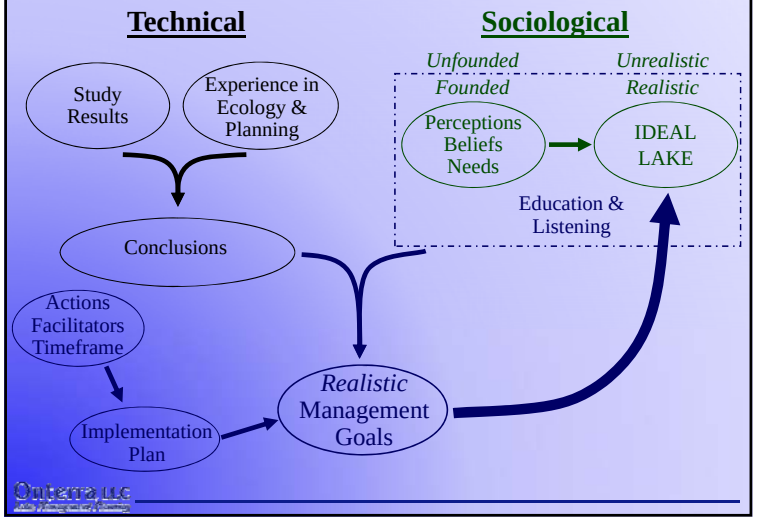
Presentation Outline

- Lake Management Planning Project Overview
- Study Results
  - Water Quality
  - Watershed
  - Aquatic Plants
  - Miscellaneous Findings
- "Big Picture"
- Goals and Actions Discussion

Study and Plan Goals

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

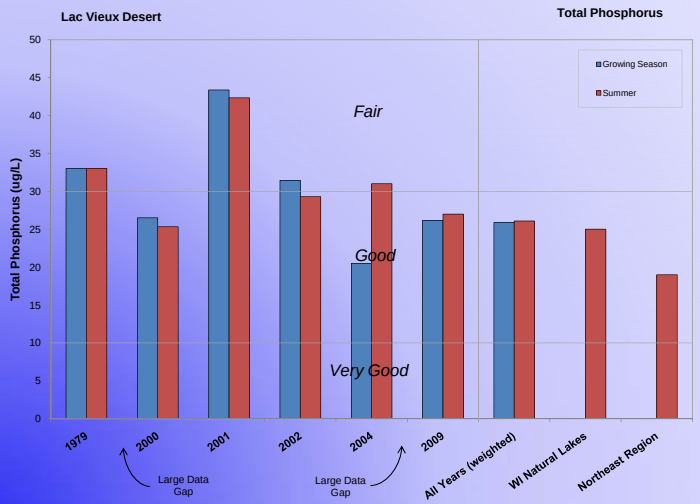
Planning Process

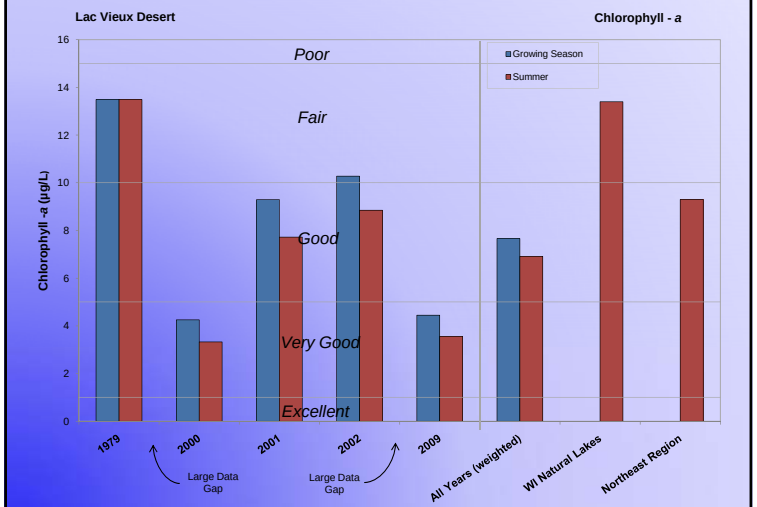


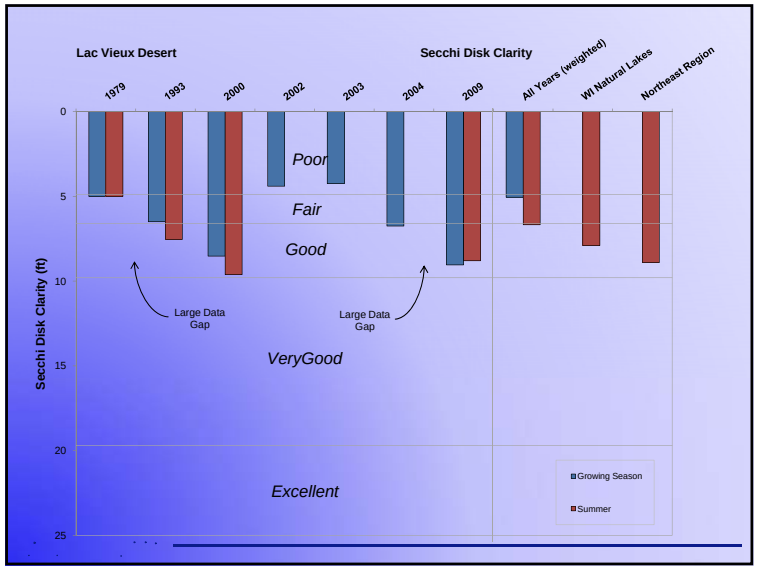
Water Quality

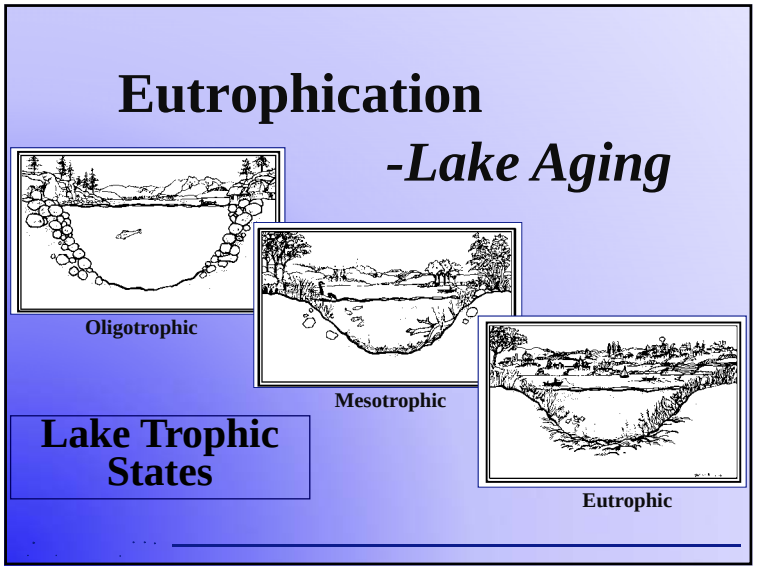
- Phosphorus (Limiting Plant Nutrient)
- Chlorophyll-*a* (Algal Abundance)
- Water Clarity (Secchi Disk)

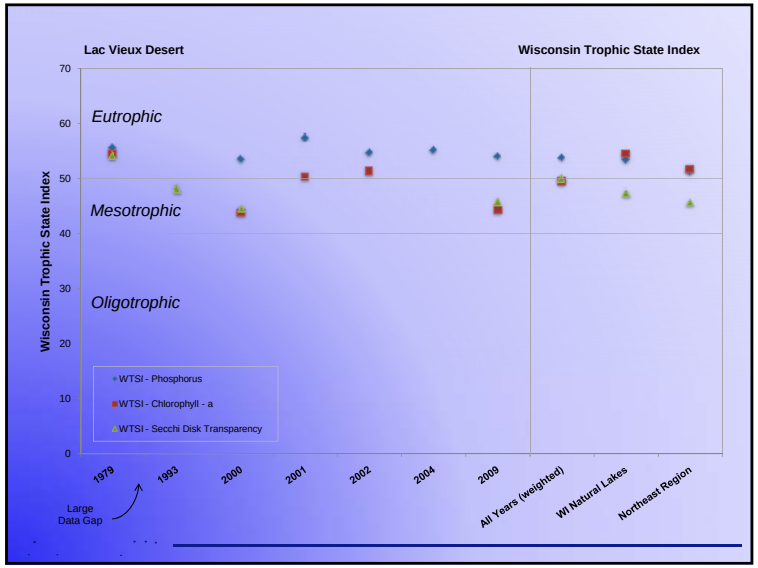
Lillie Mason Regions





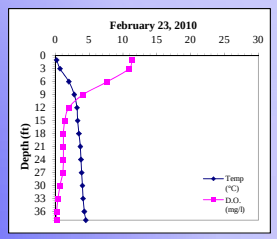




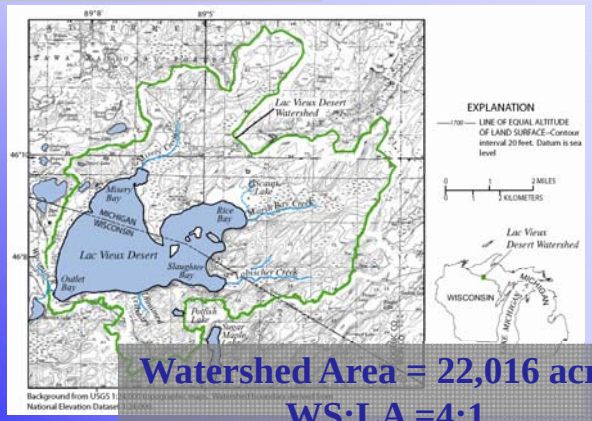


Additional Water Quality Results

- Dissolved Oxygen and Temperature Profiles
  - Lake is very well mixed throughout summer
  - Very limited anoxia occurs near lake bottom during summer
    - Little concern for winter fishkill



Lac Vieux Desert Watershed

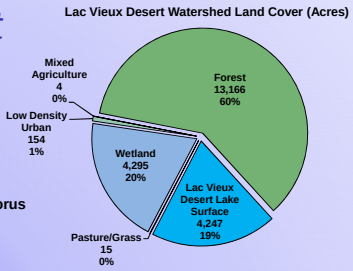


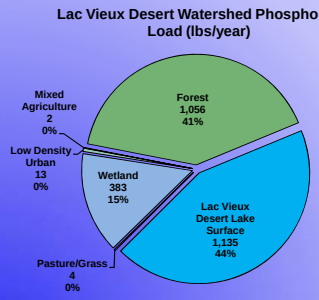
Watershed Area = 22,016 acres

WS:LA =4:1

Map created by United States Geological Survey

Lac Vieux Desert Watershed





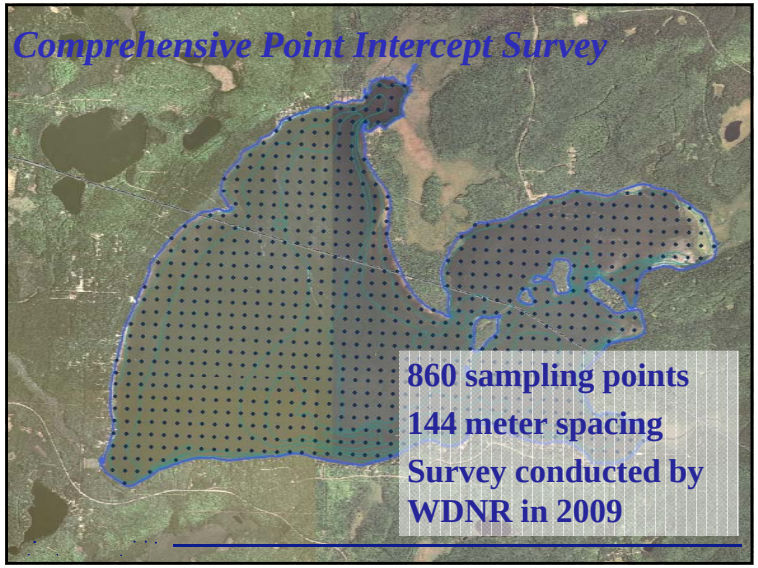
Watershed Modeling

Phosphorus export coefficients

General overview of phosphorus load

Annual Load: 2,578 lbs

Comprehensive Point Intercept Survey



860 sampling points

144 meter spacing

Survey conducted by WDNR in 2009

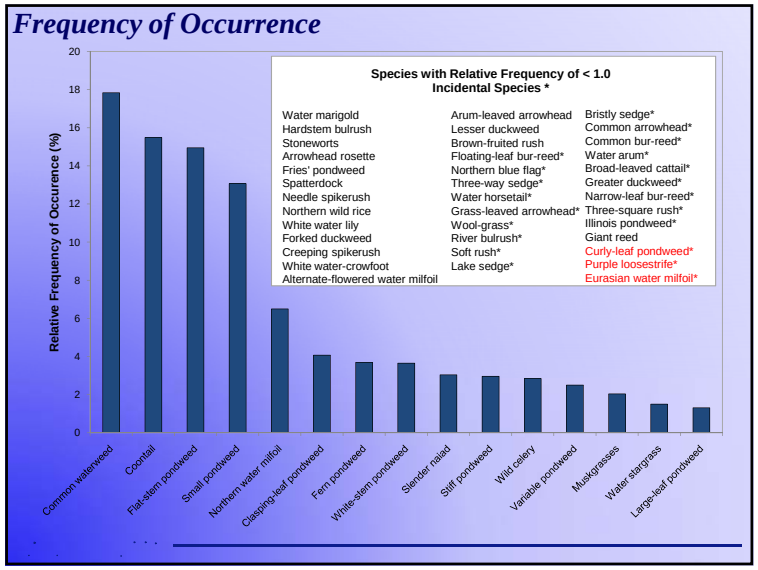
Species List

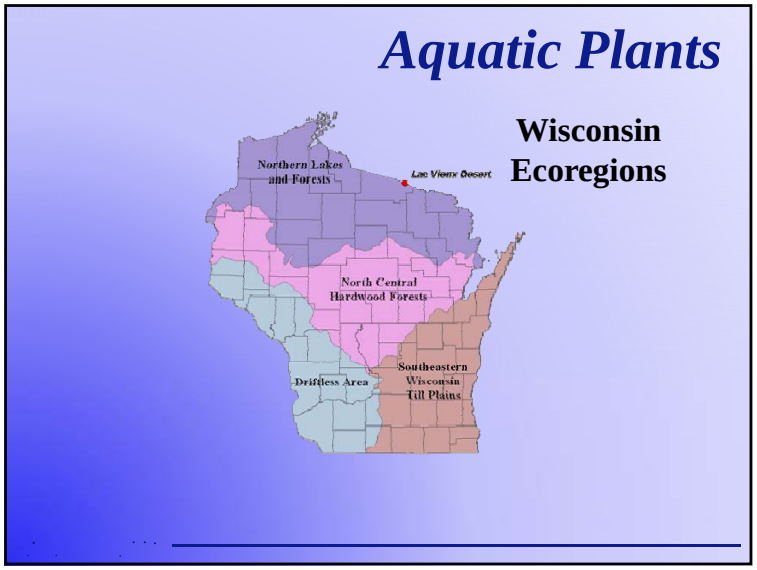
WDNR 2009 survey

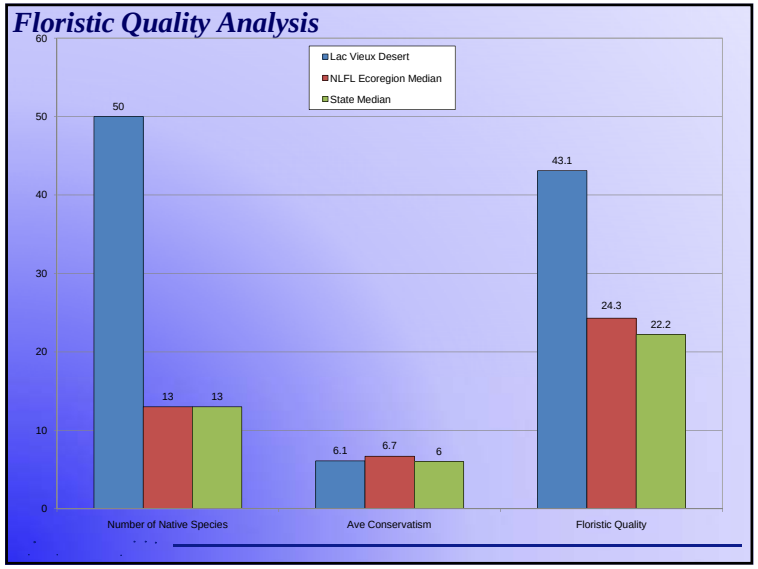
- 50 Native Species
  - Giant reed species (Phragmites) is native
- 3 Non-native Species
  - Purple loosestrife
  - Curly-leaf pondweed
    - Fragments found
  - Eurasian water milfoil

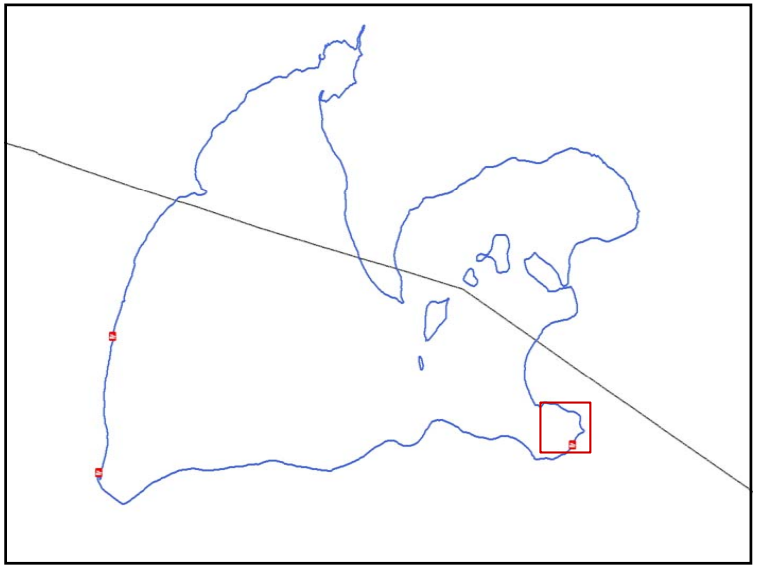
Life Form	Scientific Name	Common Name	Coefficient of Conservatism (c)
Emergent	*Bolboschoenus fluviatilis*	River bulrush	5
	Calla palustris	Water arum	9
	Carex comosa	Bristly sedge	5
	Carex lacustris	Lake sedge	6
	Dulichium arundinaceum	Three-way sedge	9
	Equisetum fluviatile	Water horsetail	7
	Eleocharis palustris	Creeping spikerush	6
	Iris versicolor	Northern blue flag	5
	Juncus effusus	Soft rush	4
	Lythrum salicaria	Purple loosestrife	Exotic
	Phragmites australis	Giant reed	1
	Schoenoplectus pungens	Three-square rush	5
	Sagittaria latifolia	Common arrowhead	3
	Scirpus cyperinus	Wool-grass	4
	Schoenoplectus acutus	Hardstem bulrush	5
	Typha latifolia	Broad-leaved cattail	1
	Zizania palustris	Northern wild rice	8
FL	*Nymphaea odorata*	White water lily	6
	Nuphar variegata	Spatterdock	6
FL/E	*Sparganium angustifolium*	Narrow-leaf bur-reed	9
	Sparganium eurycarpum	Common bur-reed	5
	Sparganium fluctuans	Floating-leaf bur-reed	10
Submergent	*Chara* sp.	Muskgrasses	7
	Ceratophyllum demersum	Coontail	3
	Elodea canadensis	Common waterweed	3
	Heteranthera dubia	Water stargrass	6
	Myriophyllum spicatum	Eurasian water milfoil	Exotic
	Myriophyllum alterniflorum	Alternate-flowered water milfoil	10
	Megalodonta beckii	Water marigold	8
	Myriophyllum sibiricum	Northern water milfoil	7
	Nitella sp.	Stoneworts	7
	Najas flexilis	Slender naiad	6
	Potamogeton illinoensis	Illinois pondweed	6
	Potamogeton crispus	Curly-leaf pondweed	Exotic
	Potamogeton friesii	Fries' pondweed	8
	Potamogeton amplifolius	Large-leaf pondweed	7
	Potamogeton gramineus	Variable pondweed	7
	Potamogeton strictifolius	Stiff pondweed	8
	Potamogeton praelongus	White-stem pondweed	8
	Potamogeton robbinsii	Fern pondweed	8
	Potamogeton richardsonii	Clasping-leaf pondweed	5
	Potamogeton pusillus	Small pondweed	7
	Potamogeton zosteriformis	Flat-stem pondweed	6
	Ranunculus aquatilis	White water-crowfoot	8
	Sagitaria sp. (rosette)	Arrowhead rosette	N/A
	Vallisneria americana	Wild celery	6
S/E	*Eleocharis acicularis*	Needle spikerush	5
	Juncus pelocarpus	Brown-fruited rush	8
	Sagittaria graminea	Grass-leaved arrowhead	9
	Sagittaria cuneata	Arum-leaved arrowhead	7
FF	*Lemna minor*	Lesser duckweed	5
	Lemna trisulca	Forked duckweed	6
	Spirodela polyrhiza	Greater duckweed	5

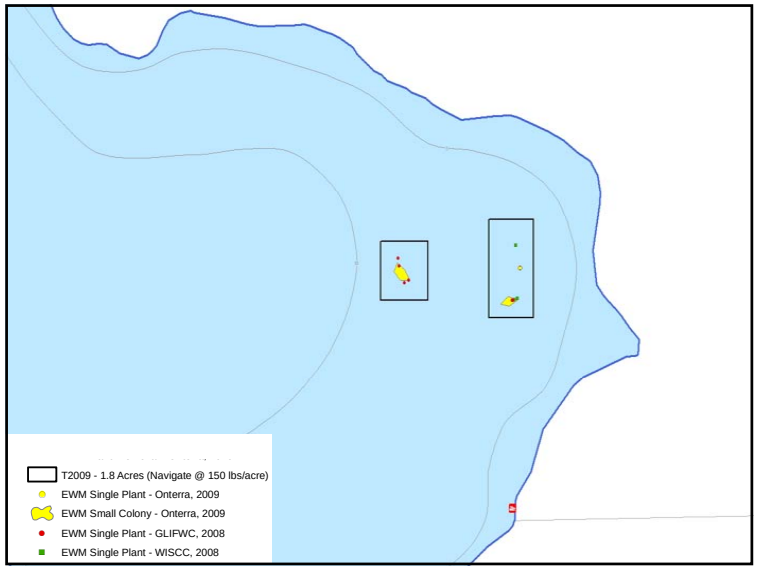
E = Emergent
FL = Floating Leaf
FL/E = Floating Leaf and Emergent
S/E = Submergent and Emergent
FF = Free Floating
* = Incidental

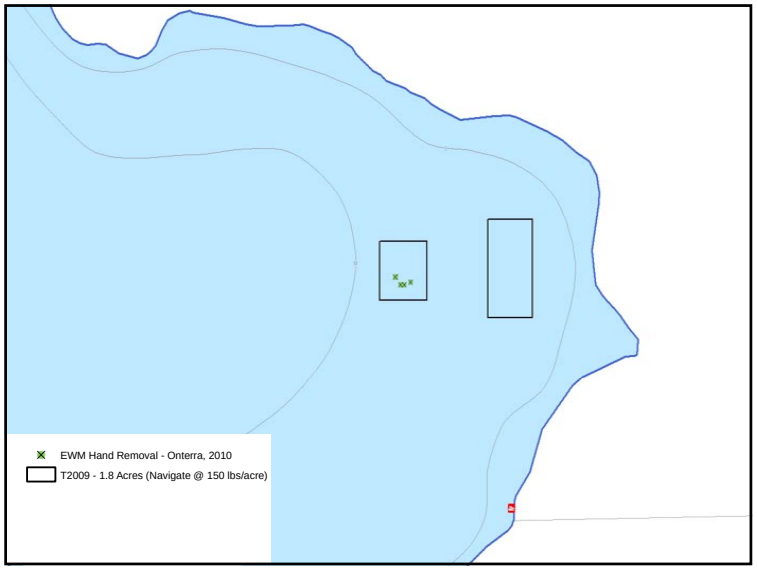

Frequency of Occurrence
Species with Relative Frequency of < 1.0
Incidental Species *
Water marigold
Hardstem bulrush
Stoneworts
Arrowhead rosette
Fries' pondweed
Spatterdock
Needle spikerush
Northern wild rice
White water lily
Forked duckweed
Creeping spikerush
White water-crowfoot
Alternate-flowered water milfoil
Arum-leaved arrowhead
Lesser duckweed
Brown-fruited rush
Floating-leaf bur-reed*
Northern blue flag*
Three-way sedge*
Water horsetail*
Grass-leaved arrowhead*
Wool-grass*
River bulrush*
Soft rush*
Lake sedge*
Bristly sedge*
Common arrowhead*
Common bur-reed*
Water arum*
Broad-leaved cattail*
Greater duckweed*
Narrow-leaf bur-reed*
Three-square rush*
Illinois pondweed*
Giant reed
Curly-leaf pondweed*
Purple loosestrife*
Eurasian water milfoil*
Relative Frequency of Occurence (%)
0
2
4
6
8
10
12
14
16
18
20
Common waterweed
Coontail
Flat-stem pondweed
Small pondweed
Northern water milfoil
Clasping-leaf pondweed
Fern pondweed
White-stem pondweed
Slender naiad
Stiff pondweed
Wild celery
Variable pondweed
Muskgrasses
Water stargrass
Large-leaf pondweed


Aquatic Plants
Wisconsin Ecoregions
Northern Lakes and Forests
Lac Vieux Desert
North Central Hardwood Forests
Driftless Area
Southeastern Wisconsin Till Plains


Floristic Quality Analysis
Lac Vieux Desert
NLFL Ecoregion Median
State Median
0
10
20
30
40
50
60
50
13
13
6.1
6.7
6
43.1
24.3
22.2
Number of Native Species
Ave Conservatism
Floristic Quality







Conclusions

- Water quality is as expected for a large, shallow lake.
  - Lake is productive and healthy.
- Overall watershed is in great condition.
  - Land cover exports minimal phosphorus, but lake has a large watershed that is able to drive productivity rate.
  - Largest, *controllable* contributor is likely shoreland properties.

Conclusions

- Aquatic plant community
  - Based upon standard analysis, native community is of moderately high quality but indicative of a disturbed system.
  - Eurasian water milfoil has been found in a small area, but control is working. Continued monitoring and possibly control are necessary.
  - Curly-leaf pondweed fragments were found on the lake on two separate occasions. Three whole-lake surveys did not discover rooted colonies.

Lac Vieux Desert Lake Association

Lac Vieux Desert
Management Planning Project
Project Wrap-up Meeting
July 19, 2012

Eddie Heath
Onterra LLC

Presentation Outline

- Lake Management Planning Project Overview
- Study Results
  - Water Quality
  - Watershed
  - Aquatic Plants
  - Fishery Information
- Conclusions
- Implementation Plan

Onterra LLC
Lake Management Planning

Study and Plan Goals

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

Onterra LLC
Lake Management Planning

Water Quality

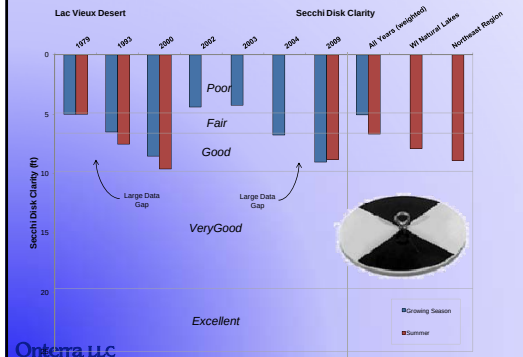
- Phosphorus (Limiting Plant Nutrient)
  Nitrogen:Phosphorus = 19:1
- Chlorophyll-*a* (Algal Abundance)
- Water Clarity (Secchi Disk)

Onterra LLC
Lake Management Planning

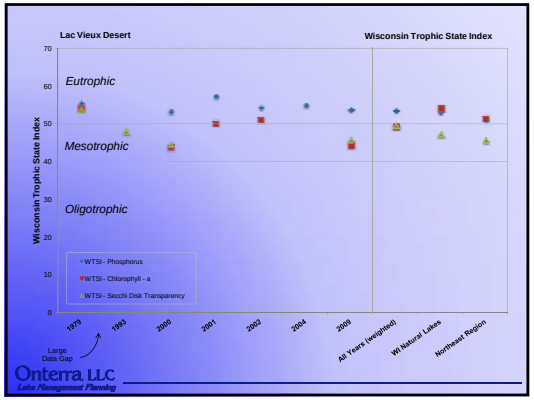
Lillie Mason Regions

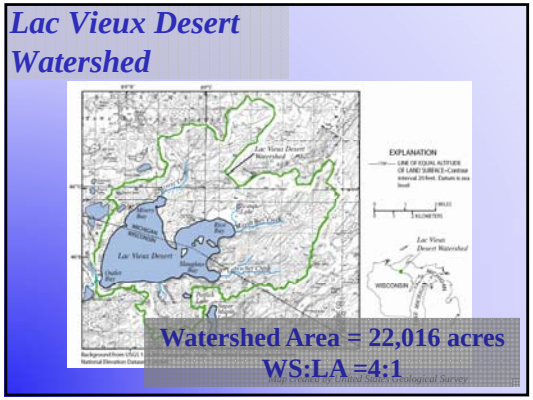
Wisconsin Ecoregions

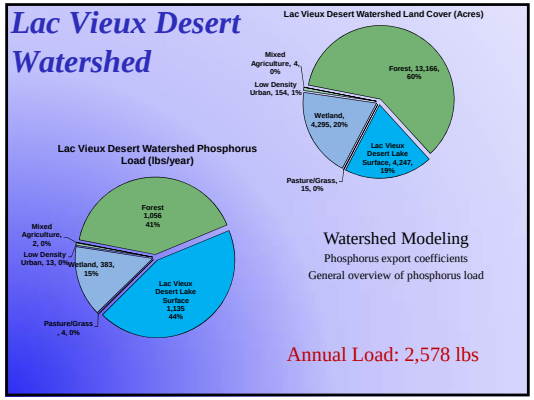
Onterra LLC
Lake Management Planning

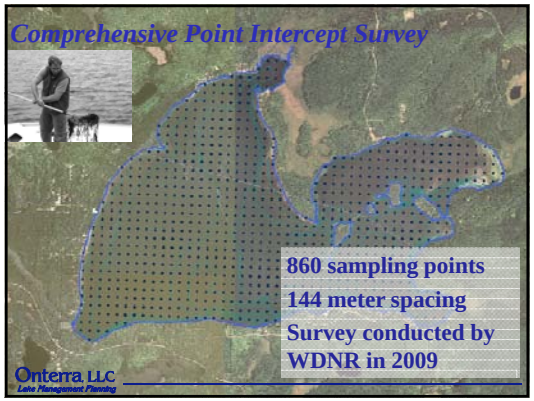


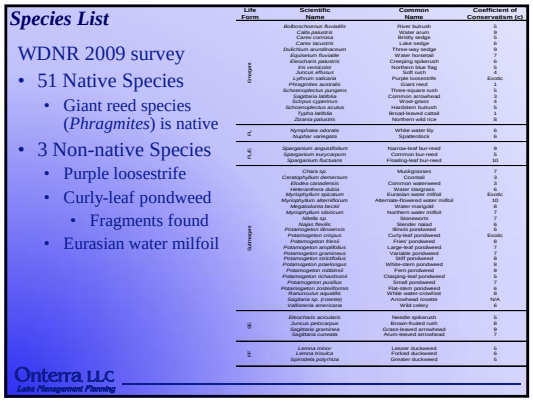
Onterra LLC
Lake Management Planning


Lac Vieux Desert
Wisconsin Trophic State Index
Eutrophic
Mesotrophic
Oligotrophic
Wisconsin Trophic State Index
WTSI - Phosphorus
WTSI - Chlorophyll - a
WTSI - Secchi Disk Transparency
1979
1995
2000
2001
2002
2004
2009
All Years (weighted)
WI Natural Lakes
Northeast Region
Large Data Gap
Onterra LLC
Lake Management Planning


Lac Vieux Desert Watershed
EXPLANATION
WISCONSIN
Watershed Area = 22,016 acres
WS:LA =4:1
Map Created by United States Geological Survey


Lac Vieux Desert Watershed
Lac Vieux Desert Watershed Land Cover (Acres)
Mixed Agriculture, 4, 0%
Low Density Urban, 154, 1%
Forest, 13,166, 60%
Wetland, 4,295, 20%
Lac Vieux Desert Lake Surface, 4,247, 19%
Pasture/Grass, 15, 0%
Lac Vieux Desert Watershed Phosphorus Load (lbs/year)
Forest 1,056 41%
Mixed Agriculture, 2, 0%
Low Density Urban, 13, 0%
Wetland, 383, 15%
Lac Vieux Desert Lake Surface 1,135 44%
Pasture/Grass , 4, 0%
Watershed Modeling
Phosphorus export coefficients
General overview of phosphorus load
Annual Load: 2,578 lbs


Comprehensive Point Intercept Survey
860 sampling points
144 meter spacing
Survey conducted by WDNR in 2009
Onterra LLC
Lake Management Planning


Species List
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3 Non-native Species
Purple loosestrife
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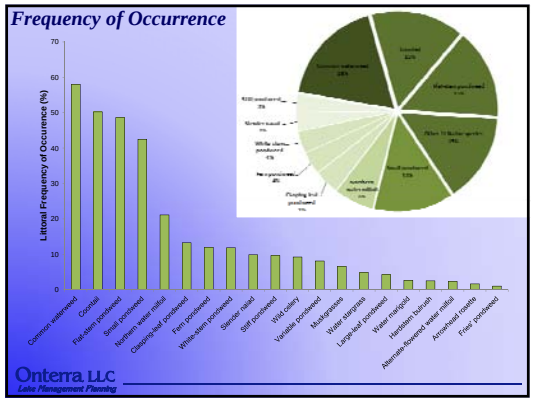
Fragments found
Eurasian water milfoil
Onterra LLC
Lake Management Planning


Frequency of Occurrence
Littoral Frequency of Occurence (%)
Common waterweed
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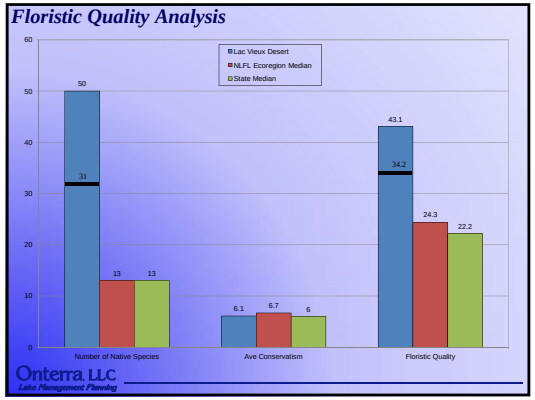
Flat-stem pondweed
Small pondweed
Northern watermilfoil
Clasping-leaf pondweed
Fern pondweed
White-stem pondweed
Slender naiad
Stiff pondweed
Wild celery
Variable pondweed
Muskgrasses
Water stargrass
Large-leaf pondweed
Water marigold
Nodding burhush
Alternate-flowered water milfoil
Arrowhead rosette
Free pondweed
Onterra LLC
Lake Management Planning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Lac Vieux Desert
NLFL Ecoregion Median
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50
31
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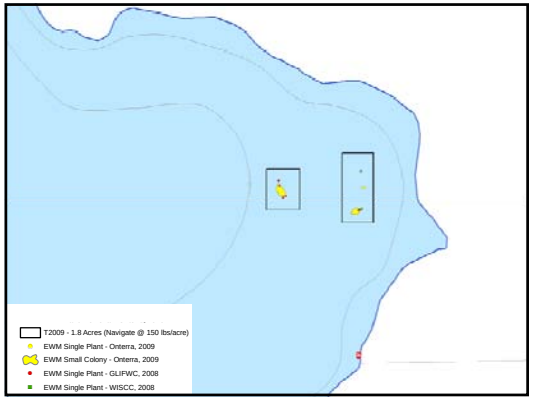
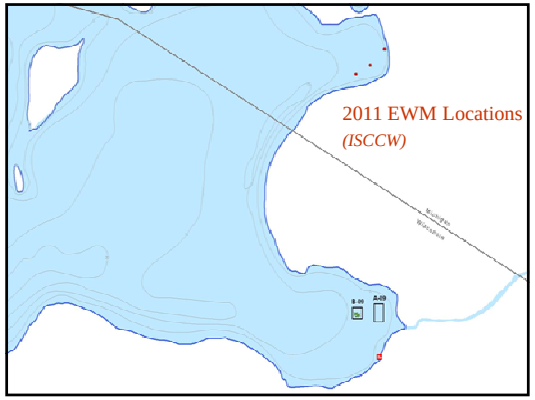
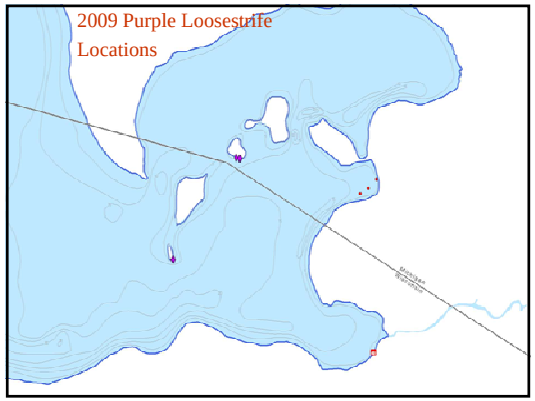
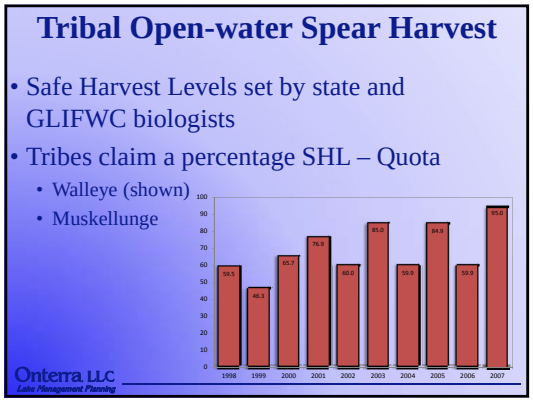
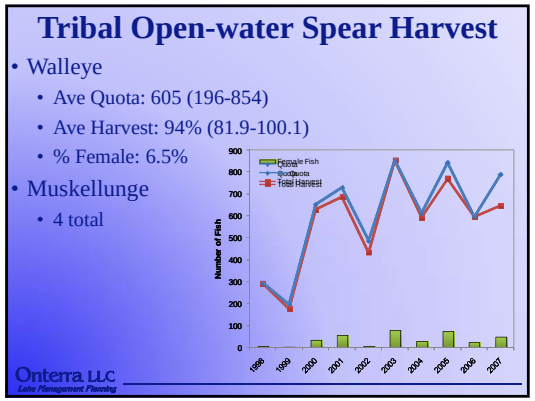
13
6.1
6.7
6
43.1
34.2
24.3
22.2
Number of Native Species
Ave Conservatism
Floristic Quality
Onterra LLC
Lake Management Planning


T2009 - 1.8 Acres (Navigate @ 150 lbs/acre)
EWM Single Plant - Onterra, 2009
EWM Small Colony - Onterra, 2009
EWM Single Plant - GLIFWC, 2008
EWM Single Plant - WISCC, 2008


2011 EWM Locations
(ISCCW)

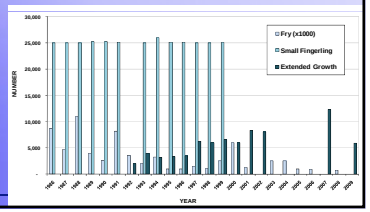

2009 Purple Loosestrife
Locations


Tribal Open-water Spear Harvest
• Safe Harvest Levels set by state and GLIFWC biologists
• Tribes claim a percentage SHL – Quota
• Walleye (shown)
• Muskellunge
59.5
46.3
65.7
76.9
60.0
85.0
59.9
84.9
59.9
95.0
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
Onterra LLC
Lake Management Planning


Tribal Open-water Spear Harvest
• Walleye
• Ave Quota: 605 (196-854)
• Ave Harvest: 94% (81.9-100.1)
• % Female: 6.5%
• Muskellunge
• 4 total
Female Fish
Quota
Total Harvest
Number of Fish
Onterra LLC
Lake Management Planning

Stocking

- Muskellunge
  - ~2,000 every other year
- Walleye
  - Rearing program (1986-1999)
- Brook Trout
  - 430 in 2000



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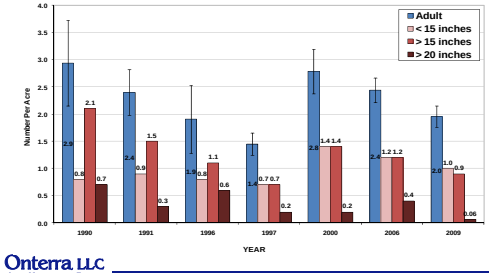
Lake Management Planning

Walleye Population

- Declining?
  - Survey planned 2012



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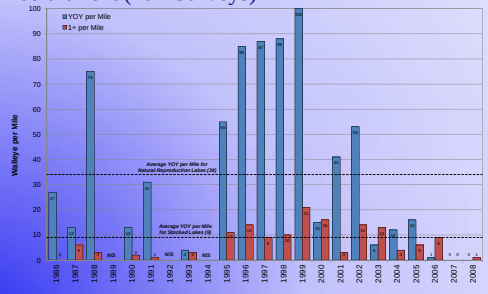
Walleye Population

- Recruitment (Fall Surveys)



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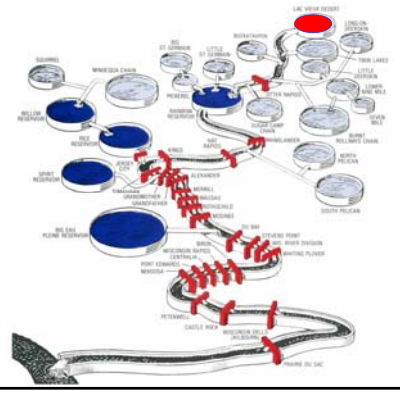
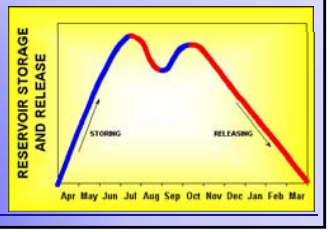
Lake Management Planning

WVIC



WVIC Operations Plan

- Store when precipitation abundant
  - Spring & late-summer
- Release to augment low precipitation
  - Summer & winter
- Operation Range
  - Min/Max Level
  - Min outflow



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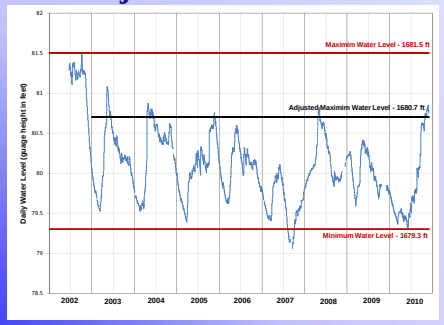
Lake Management Planning

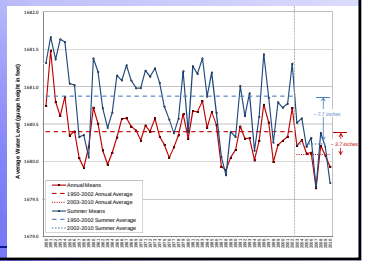
Adjusted Maximum



Onterra LLC
Lake Management Planning

WVIC Operations Plan

- Reduced maximum by 8 inches
- Annual ave reduced **3.7** inches
- Summer ave reduced **7.7** inches



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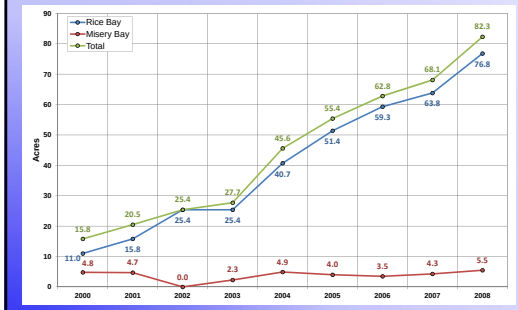
Rice Population



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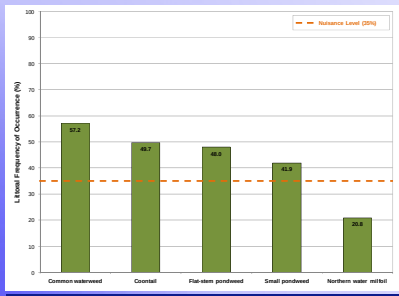
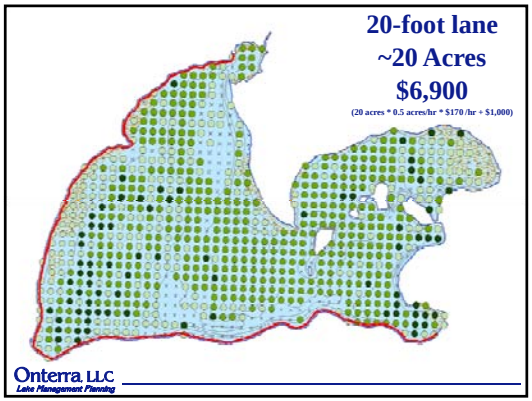
Native Plant Concerns

- Nuisance Conditions?



Onterra LLC Lake Management Planning



Onterra LLC Lake Management Planning

Conclusions

- Water quality is as expected for a large, shallow lake.
  - Lake is productive and healthy.
- Overall watershed is in great condition.
  - Land cover exports minimal phosphorus, but lake has a large watershed that is able to drive productivity rate.
  - Largest, *controllable* contributor is likely shoreland properties.

Onterra LLC Lake Management Planning

Conclusions

- Aquatic plant community
  - Based upon standard analysis, native community is of moderately high quality but some indicative of a disturbed system.
  - Eurasian water milfoil has been found in a few small areas. Continued monitoring and possibly future control are necessary.
  - Curly-leaf pondweed fragments were found on the lake on two separate occasions. Multiple whole-lake surveys did not discover rooted colonies.

Onterra LLC Lake Management Planning

Planning Process

Planning Committee Meetings

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

↓

Implementation Plan

Onterra LLC Lake Management Planning

Management Goal 1:
Increase Lac Vieux Desert Lake Association's Capacity to Communicate with Lake Stakeholders

Management Actions

1. Support an Education Committee to promote safe boating, water quality, public safety, and quality of life on LVD.

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Management Goal 2:
Facilitate Partnerships with Other Management Entities

Management Actions

1. Enhance LVDLA's involvement with other entities that have a hand in managing (management units) LVD.

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Management Goal 3:
Maintain Current Water Quality Conditions

Management Actions

1. Monitor water quality through WDNR Citizens Lake Monitoring Network.
2. Reduce phosphorus and sediment loads from shoreland watershed to LVD (educational initiative).

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Management Goal 4:
Prevent Aquatic Invasive Species Introductions to Lac Vieux Desert

Management Actions

1. Continue Clean Boats Clean Waters watercraft inspections at LVD public access.
2. Coordinate annual volunteer monitoring of aquatic invasive species.
   * Vilas County (Ted Ritter) would initially take responsibility of coordinating with: LVDLA, ISSCW, GLIFWC, LVD Tribe, & USFS
4. Initiate aquatic invasive species rapid response plan upon new or recurring exotic infestation
5. Reduce occurrence of purple loosestrife on Lac Vieux Desert shorelands

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Management Goal 5:
Improve Fishery Resources and Fishing on Big LVD

Management Actions

1. Work with fisheries managers to enhance the fishery on LVD

Onterra LLC Lake Management Planning

B

APPENDIX B

Stakeholder Survey Response Charts and Comments

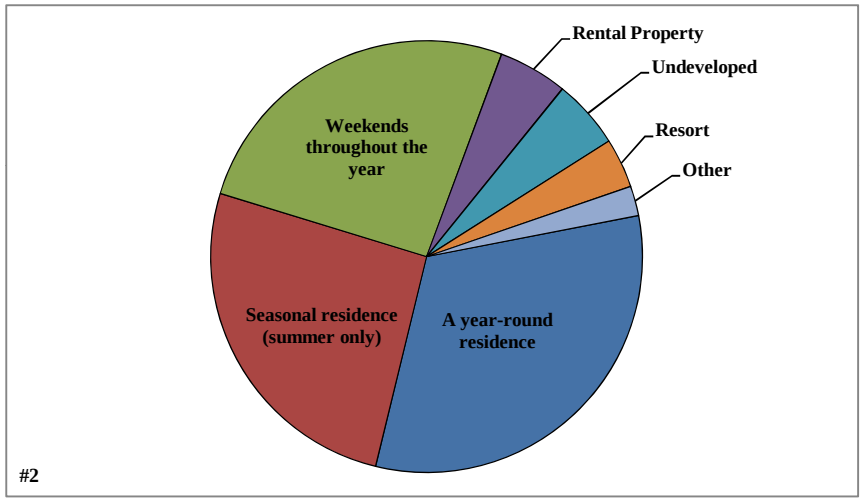
Returned Surveys	131
Sent Surveys	301
Response Rate (%)	43.5

#1 In which state does your Lac Vieux Desert property reside?

	Total	%
Wisconsin	99	*76.2*
Michigan	31	*23.8*
	130	*100.0*

#2 What type of property do you own on Lac Vieux Desert?

	Total	%
A year-round residence	43	*31.9*
Seasonal residence (summer only)	35	*25.9*
Weekends throughout the year	35	*25.9*
Rental Property	7	*5.2*
Undeveloped	7	*5.2*
Resort	5	*3.7*
Other	3	*2.2*
	135	*100.0*

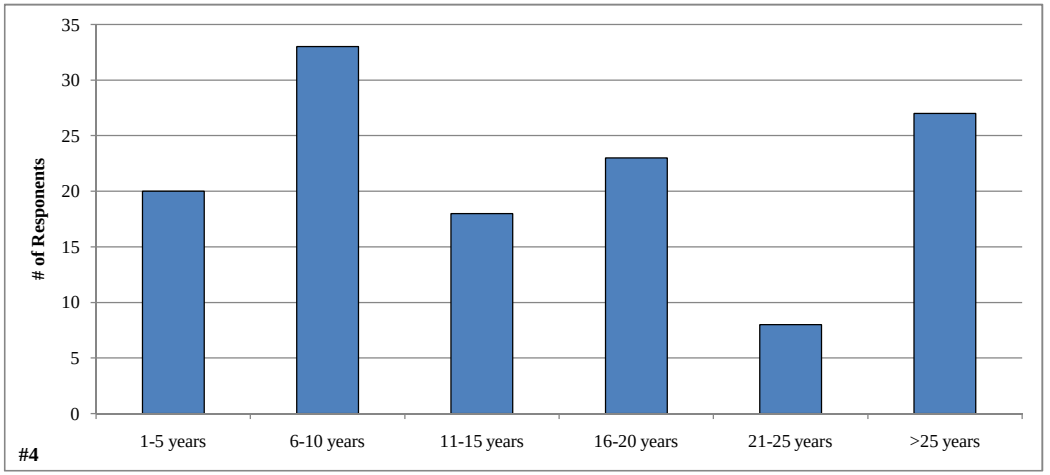


#3 If you are not a year-round resident, how many days each year is your property used by you or others?

Answered Question	76
Average	76.4
Standard deviation	65.7

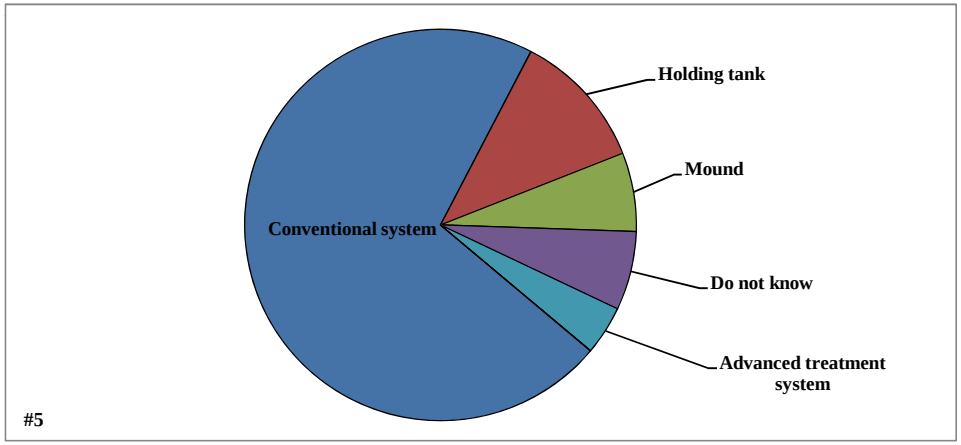
#4 How many years have you owned property on Lac Vieux Desert?

	Total	%
1-5 years	20	*15.5*
6-10 years	33	*25.6*
11-15 years	18	*14.0*
16-20 years	23	*17.8*
21-25 years	8	*6.2*
>25 years	27	*20.9*
	129	*100.0*



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

	Total	%
Conventional system	88	*71.5*
Holding tank	14	*11.4*
Mound	8	*6.5*
Do not know	8	*6.5*
Advanced treatment system	5	*4.1*
Municipal Sewer	0	*0.0*
	123	*100.0*

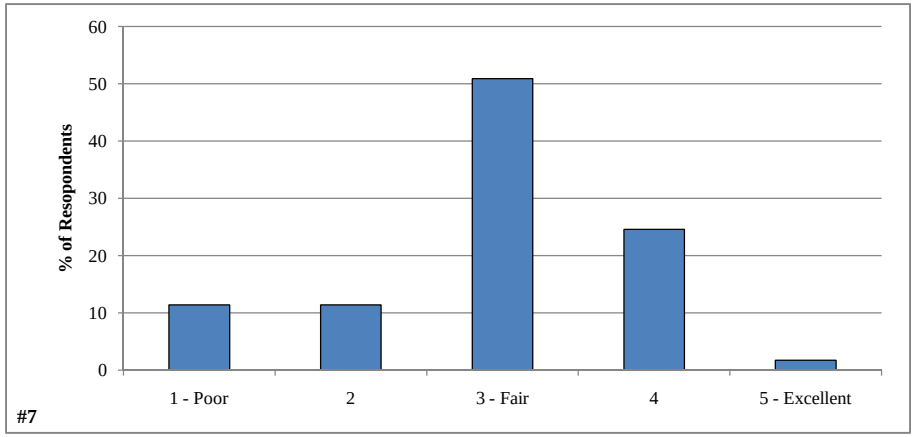


#6 Have you fished on Lac Vieux Desert in the past 3 years?

	Total	%
Yes	126	*96.9*
No	4	*3.1*
	130	*100.0*

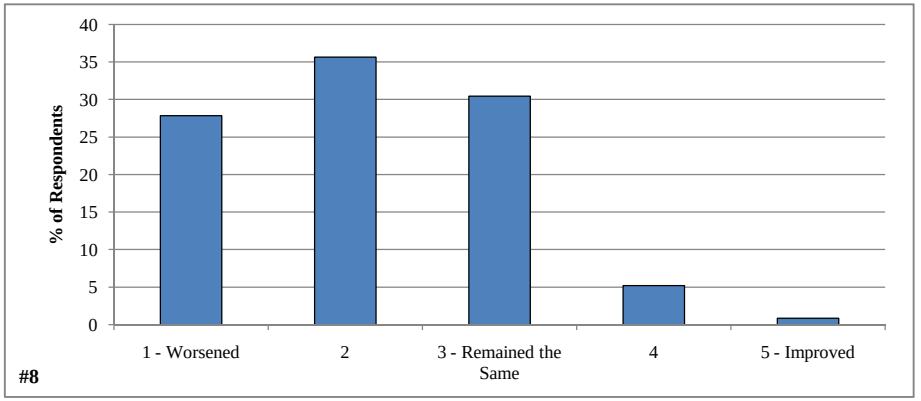
#7 How would you describe the current quality of fishing on Lac Vieux Desert?

	Total	%
1 - Poor	13	*11.4*
2	13	*11.4*
3 - Fair	58	*50.9*
4	28	*24.6*
5 - Excellent	2	*1.8*
	114	*100.0*



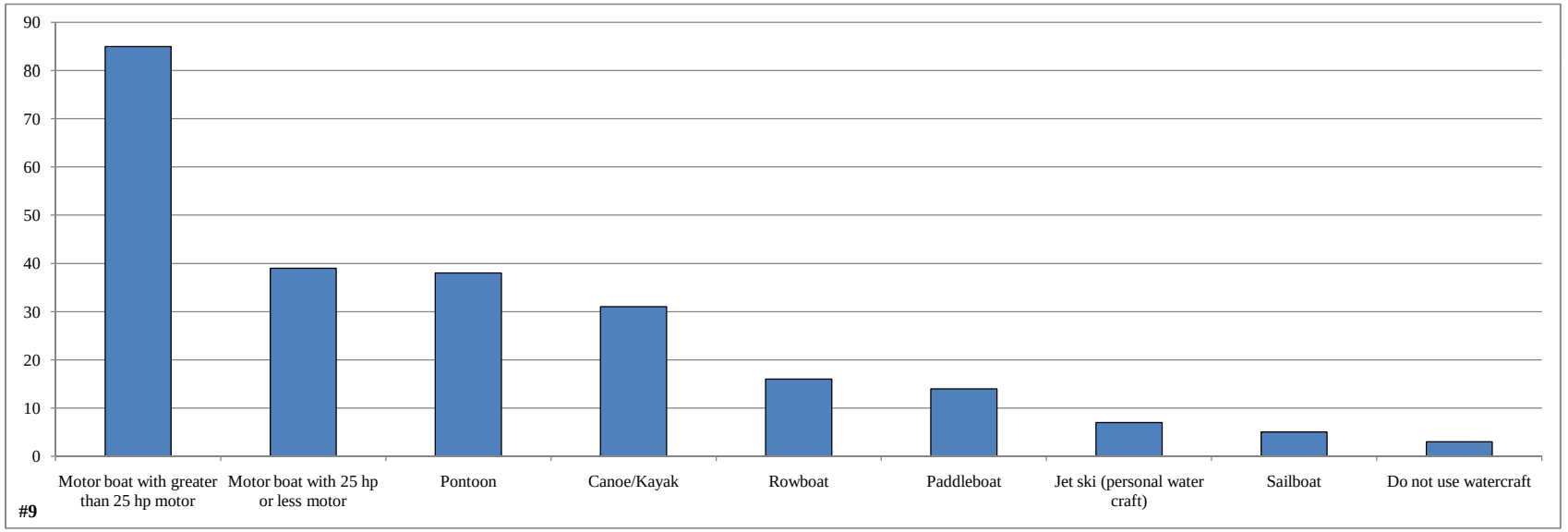
#8 How has the quality of fishing changed on Lac Vieux Desert since you obtained your property?

	Total	%
1 - Worsened	32	*27.8*
2	41	*35.7*
3 - Remained the Same	35	*30.4*
4	6	*5.2*
5 - Improved	1	*0.9*
	115	*100.0*



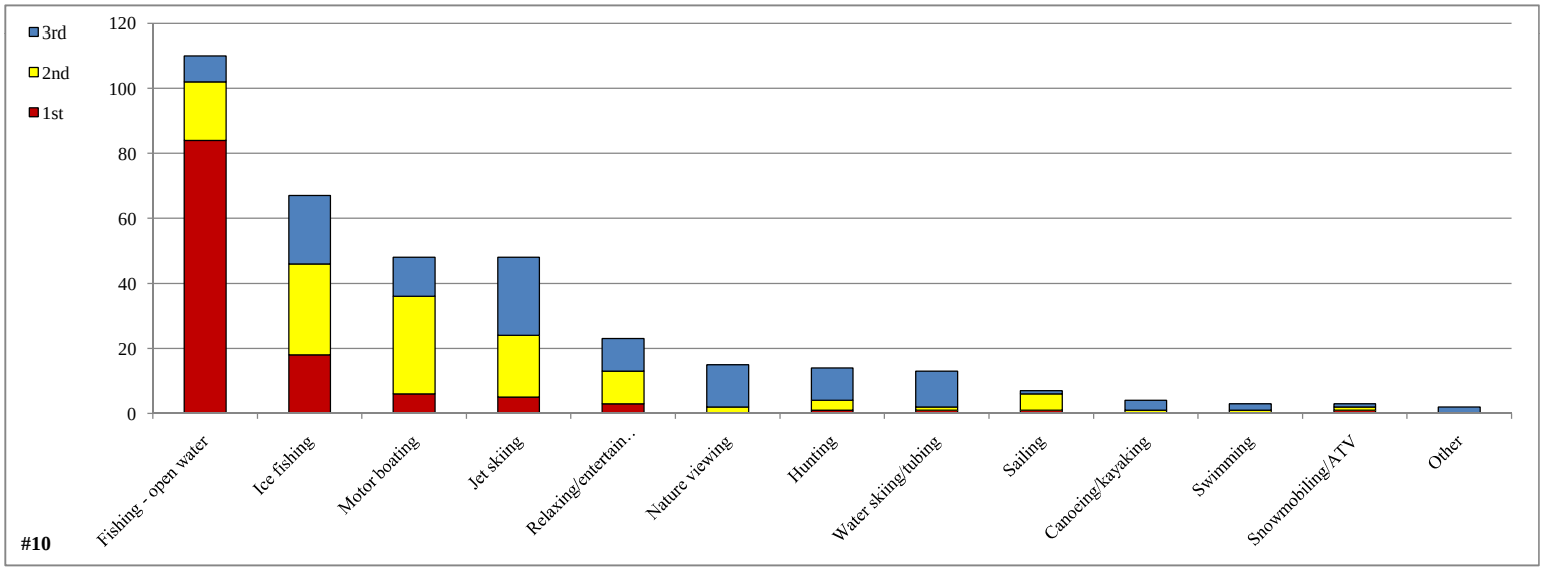
#9 What types of watercraft do you or others that use your property, currently use on the lake?

	Total
Motor boat with greater than 25 hp motor	85
Motor boat with 25 hp or less motor	39
Pontoon	38
Canoe/Kayak	31
Rowboat	16
Paddleboat	14
Jet ski (personal water craft)	7
Sailboat	5
Do not use watercraft	3
	238



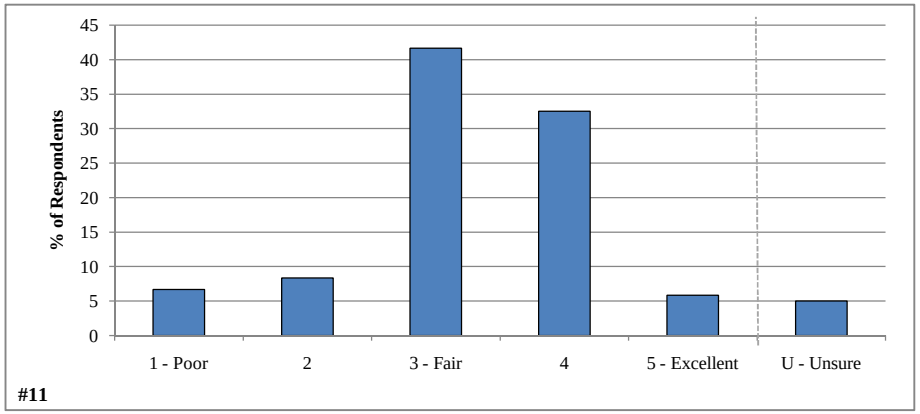
#10 Please rank the activities below that are the most important or enjoyable to you on Lac Vieux Desert?

	1st	2nd	3rd	*% ranked*
Fishing - open water	84	18	8	*30.8*
Ice fishing	18	28	21	*18.8*
Motor boating	6	30	12	*13.4*
Jet skiing	5	19	24	*13.4*
Relaxing/entertaining	3	10	10	*6.4*
Nature viewing	0	2	13	*4.2*
Hunting	1	3	10	*3.9*
Water skiing/tubing	1	1	11	*3.6*
Sailing	1	5	1	*2.0*
Canoeing/kayaking	0	1	3	*1.1*
Swimming	0	1	2	*0.8*
Snowmobiling/ATV	1	1	1	*0.8*
Other	0	0	2	*0.6*
	120	119	118	*100.0*



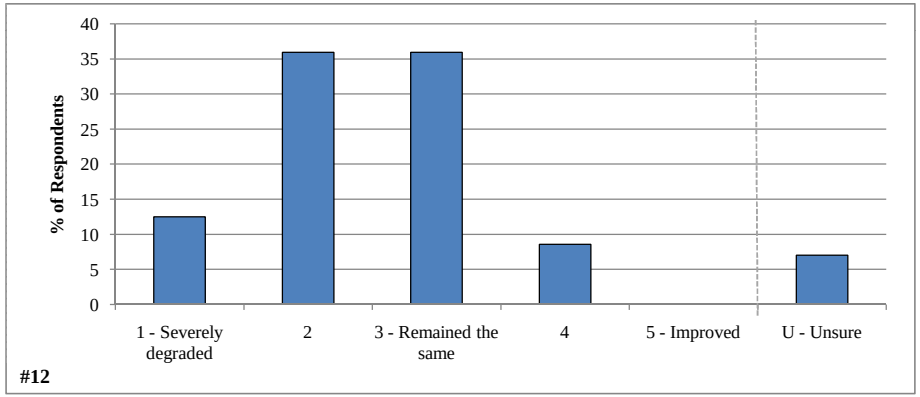
#11 How would you describe the current water quality of Lac Vieux Desert?

	Total	%
1 - Poor	8	*6.7*
2	10	*8.3*
3 - Fair	50	*41.7*
4	39	*32.5*
5 - Excellent	7	*5.8*
U - Unsure	6	*5.0*
	120	*100.0*



#12 How has the water quality changed in Lac Vieux Desert since you obtained your property?

	Total	%
1 - Severely degraded	16	*12.5*
2	46	*35.9*
3 - Remained the same	46	*35.9*
4	11	*8.6*
5 - Improved	0	*0.0*
U - Unsure	9	*7.0*
	128	*100.0*



#13 Have you ever heard of aquatic invasive species?

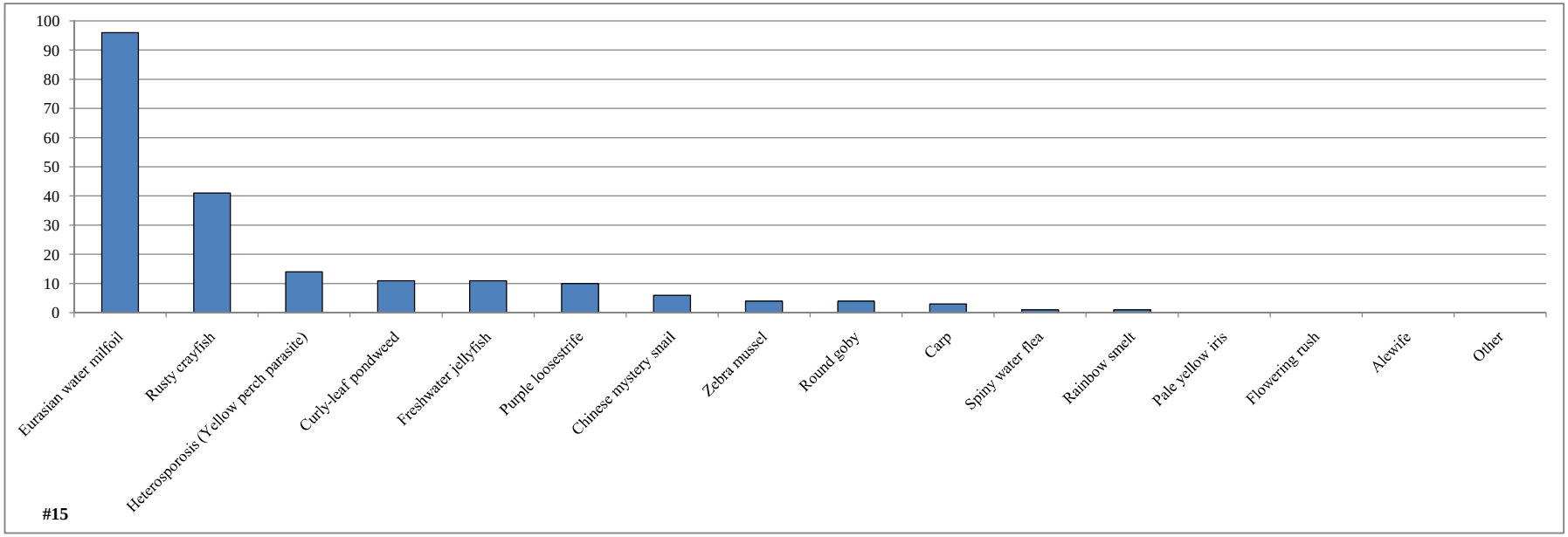
	Total	%
Yes	128	*98.5*
No	2	*1.5*
	130	*100.0*

#14 Are you aware of aquatic invasive species in Lac Vieux Desert?

	Total	%
Yes	102	*79.1*
No	27	*20.9*
	129	*100.0*

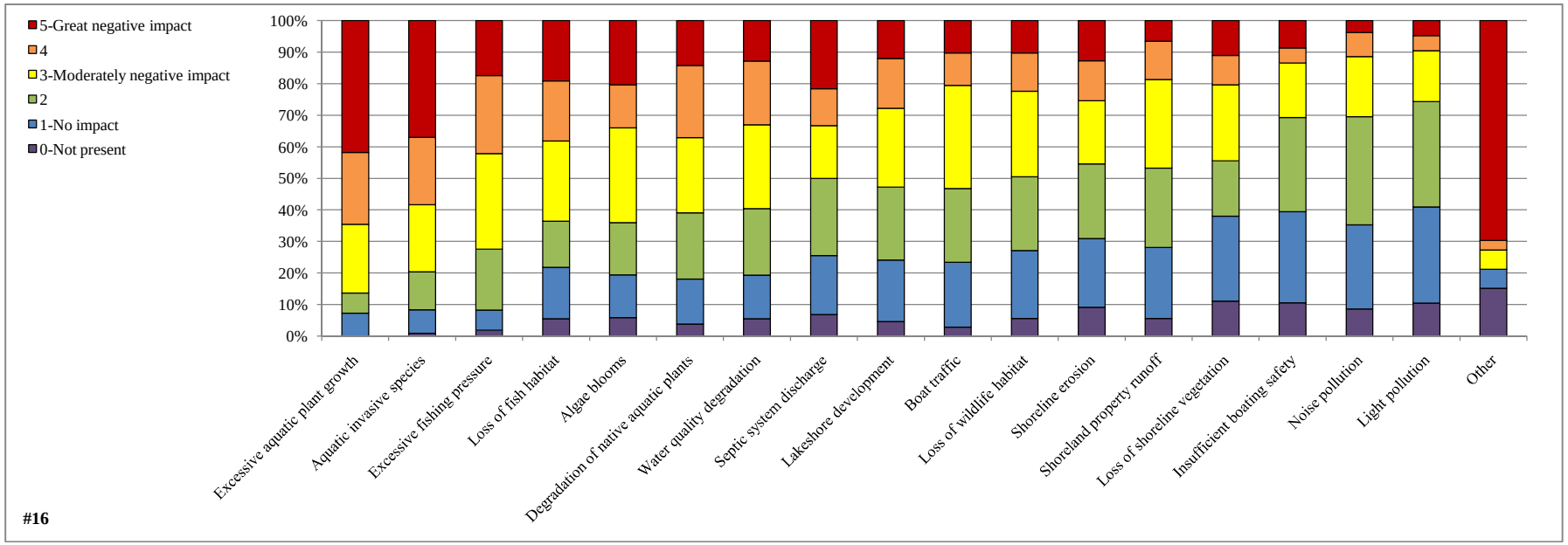
#15 Which aquatic invasive species are you aware of in Lac Vieux Desert?

	Total
Eurasian water milfoil	96
Rusty crayfish	41
Heterosporosis (Yellow perch parasite)	14
Curly-leaf pondweed	11
Freshwater jellyfish	11
Purple loosestrife	10
Chinese mystery snail	6
Zebra mussel	4
Round goby	4
Carp	3
Spiny water flea	1
Rainbow smelt	1
Pale yellow iris	0
Flowering rush	0
Alewife	0
Other	0
	197



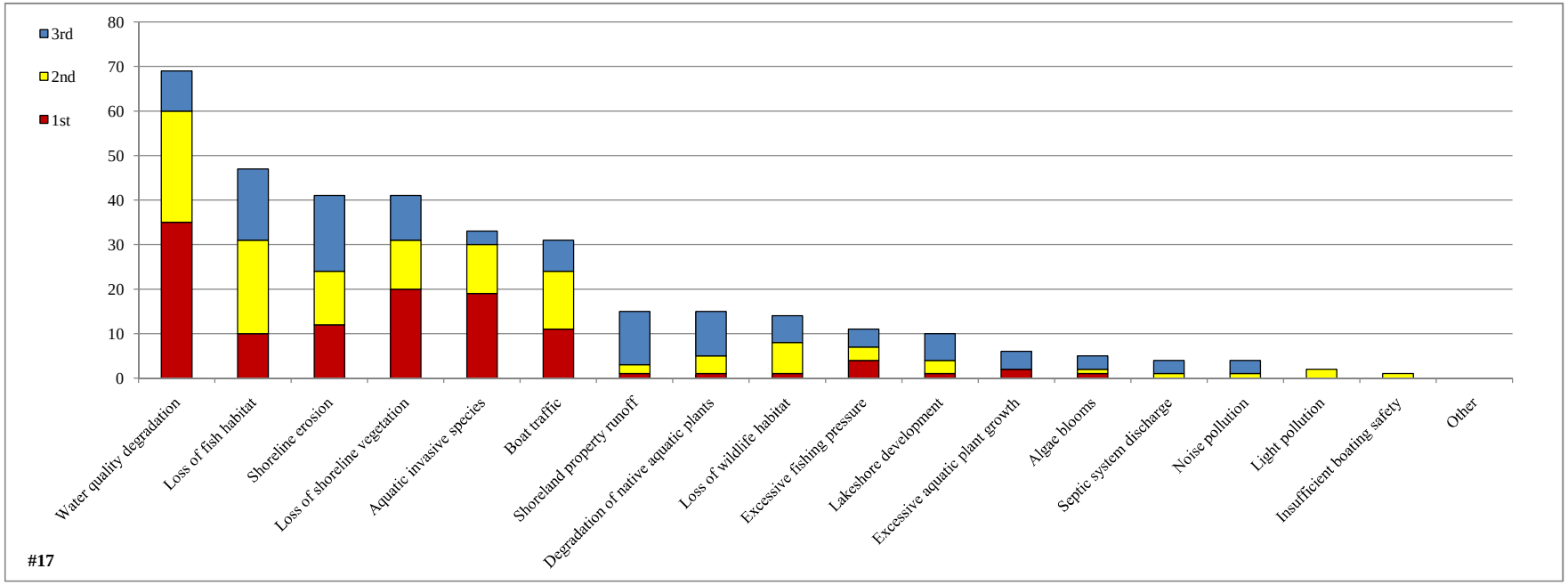
#16 To what level do you believe each the following factors may be negatively impacting Lac Vieux Desert?

	0-Not present	1-No impact	2	3-Moderately negative impact	4	5-Great negative impact	*Total*	*Average*
Excessive aquatic plant growth	0	8	7	24	25	46	*110*	*3.9*
Aquatic invasive species	1	8	13	23	23	40	*108*	*3.7*
Excessive fishing pressure	2	7	21	33	27	19	*109*	*3.2*
Loss of fish habitat	6	18	16	28	21	21	*110*	*2.9*
Algae blooms	6	14	17	31	14	21	*103*	*2.9*
Degradation of native aquatic plants	4	15	22	25	24	15	*105*	*2.9*
Water quality degradation	6	15	23	29	22	14	*109*	*2.8*
Septic system discharge	7	19	25	17	12	22	*102*	*2.7*
Lakeshore development	5	21	25	27	17	13	*108*	*2.6*
Boat traffic	3	22	25	35	11	11	*107*	*2.6*
Loss of wildlife habitat	6	23	25	29	13	11	*107*	*2.5*
Shoreline erosion	10	24	26	22	14	14	*110*	*2.4*
Shoreland property runoff	6	24	27	30	13	7	*107*	*2.4*
Loss of shoreline vegetation	12	29	19	26	10	12	*108*	*2.3*
Insufficient boating safety	11	30	31	18	5	9	*104*	*2.0*
Noise pollution	9	28	36	20	8	4	*105*	*2.0*
Light pollution	11	32	35	17	5	5	*105*	*1.9*
Other	5	2	0	2	1	23	*33*	*3.8*



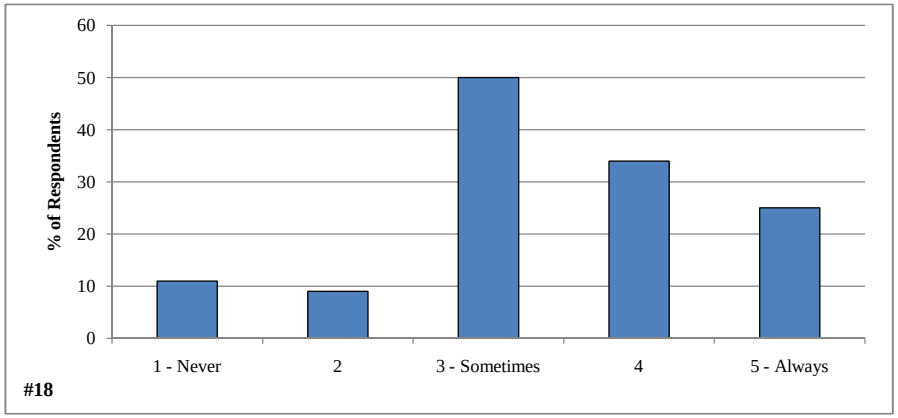
#17 Please rank your top three concerns regarding Lac Vieux Desert.

	1st	2nd	3rd	*% Ranked*
Water quality degradation	35	25	9	*19.8*
Loss of fish habitat	10	21	16	*13.5*
Shoreline erosion	12	12	17	*11.7*
Loss of shoreline vegetation	20	11	10	*11.7*
Aquatic invasive species	19	11	3	*9.5*
Boat traffic	11	13	7	*8.9*
Shoreland property runoff	1	2	12	*4.3*
Degradation of native aquatic plants	1	4	10	*4.3*
Loss of wildlife habitat	1	7	6	*4.0*
Excessive fishing pressure	4	3	4	*3.2*
Lakeshore development	1	3	6	*2.9*
Excessive aquatic plant growth	2	0	4	*1.7*
Algae blooms	1	1	3	*1.4*
Septic system discharge	0	1	3	*1.1*
Noise pollution	0	1	3	*1.1*
Light pollution	0	2	0	*0.6*
Insufficient boating safety	0	1	0	*0.3*
Other	0	0	0	*0.0*
	118	118	113	*100.0*



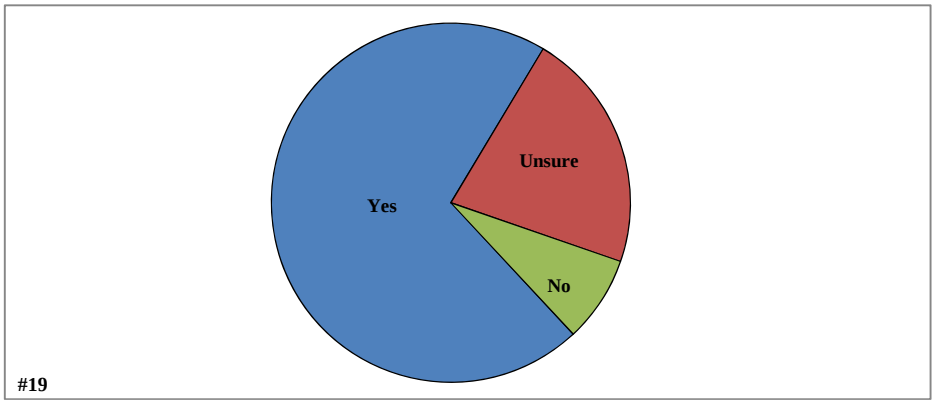
#18 During open-water season how often does aquatic plant growth negatively impact your enjoyment of Lac Vieux Desert?

	Total	%
1 - Never	11	*8.5*
2	9	*7.0*
3 - Sometimes	50	*38.8*
4	34	*26.4*
5 - Always	25	*19.4*
	129	*100.0*



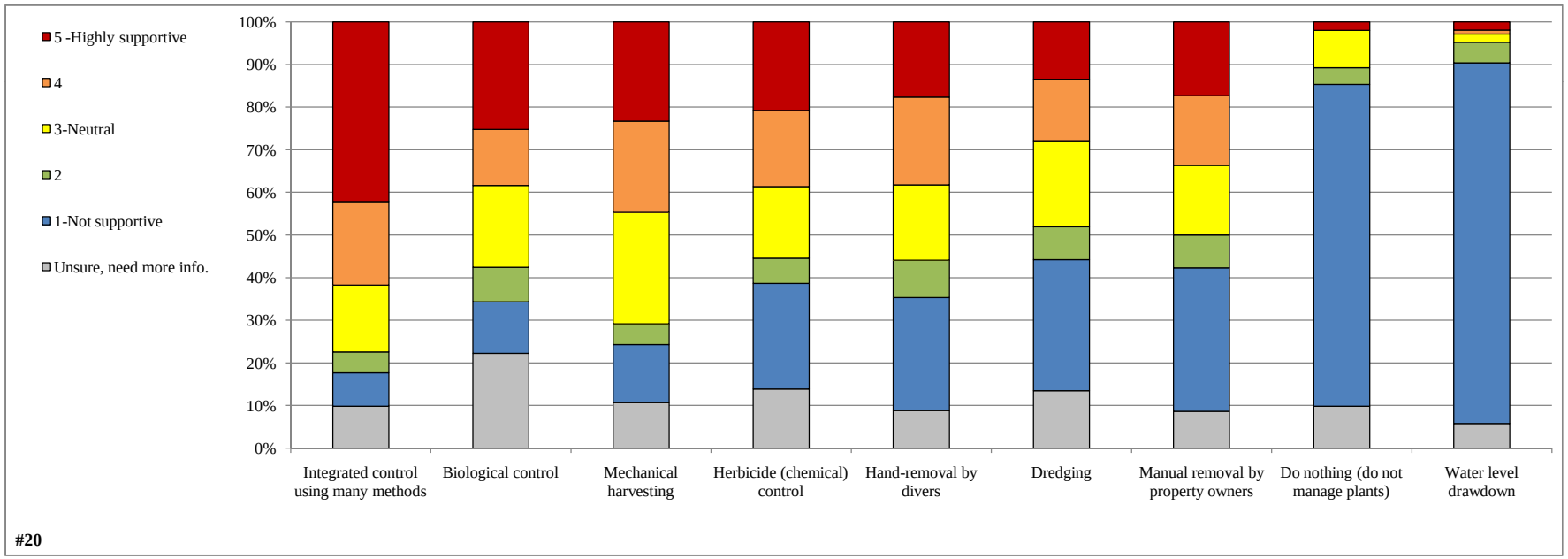
#19 Considering your answer to the question above, do you believe aquatic plant control is needed on Lac Vieux Desert?

	Total	%
Yes	91	*70.5*
Unsure	28	*21.7*
No	10	*7.8*
	129	*100.0*



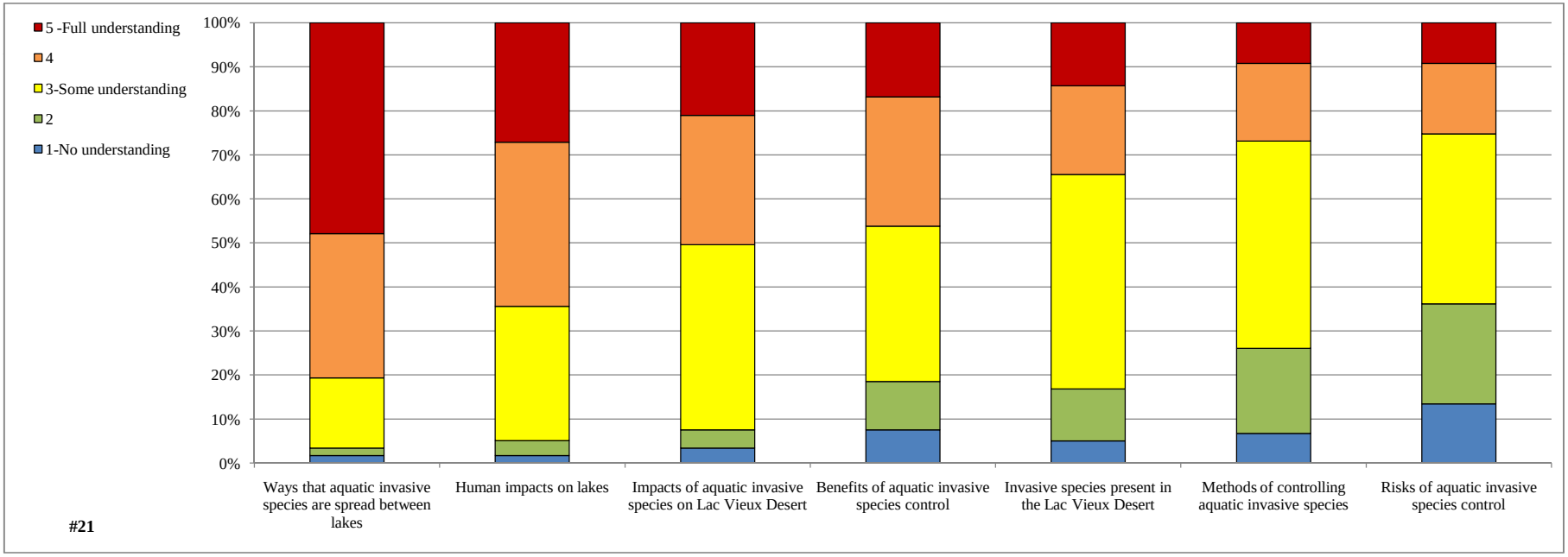
#20 What is your level of support for the responsible use of the following techniques on Lac Vieux Desert?

	1-Not supportive	2	3-Neutral	4	5 -Highly supportive	Unsure, need more info.	*Total*	*Average*
Integrated control using many methods	8	5	16	20	43	10	*92*	*4.2*
Biological control	12	8	19	13	25	22	*77*	*3.9*
Mechanical harvesting	14	5	27	22	24	11	*92*	*3.8*
Herbicide (chemical) control	25	6	17	18	21	14	*87*	*3.6*
Hand-removal by divers	27	9	18	21	18	9	*93*	*3.3*
Dredging	32	8	21	15	14	14	*90*	*3.1*
Manual removal by property owners	35	8	17	17	18	9	*95*	*3.1*
Do nothing (do not manage plants)	77	4	9	0	2	10	*92*	*1.8*
Water level drawdown	88	5	2	1	2	6	*98*	*1.8*



#21 Please describe your level of understanding of each of the following lake management issues.

	1-No understanding	2	3-Some understanding	4	5 -Full understanding	*Total*	*Average*
Ways that aquatic invasive species are spread between lakes	2	2	19	39	57	*119*	*4.2*
Human impacts on lakes	2	4	36	44	32	*118*	*3.8*
Impacts of aquatic invasive species on Lac Vieux Desert	4	5	50	35	25	*119*	*3.6*
Benefits of aquatic invasive species control	9	13	42	35	20	*119*	*3.4*
Invasive species present in the Lac Vieux Desert	6	14	58	24	17	*119*	*3.3*
Methods of controlling aquatic invasive species	8	23	56	21	11	*119*	*3.0*
Risks of aquatic invasive species control	16	27	46	19	11	*119*	*2.8*



#22 Before receiving this mailing, have you ever heard of the Lac Vieux Desert Lake Association?

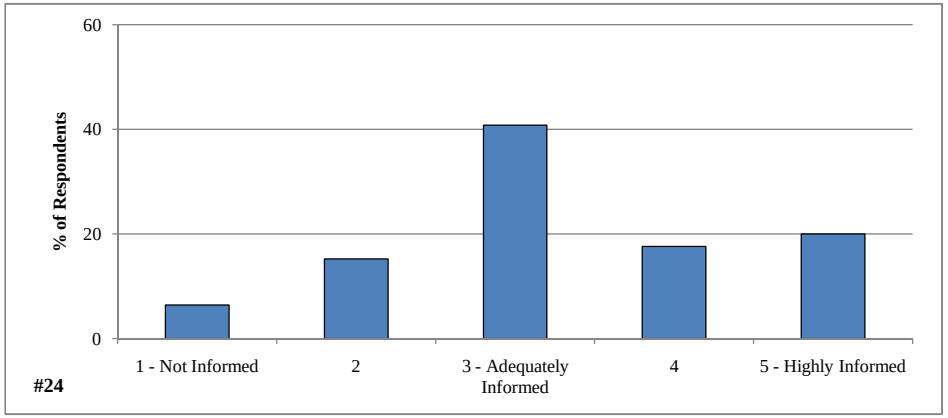
	Total	%
Yes	115	*95.8*
No	5	*4.2*
	120	*100.0*

#23 Are you currently a member of the Lac Vieux Desert Lake Association?

	Total	%
Yes	94	*81.0*
No	22	*19.0*
	116	*100.0*

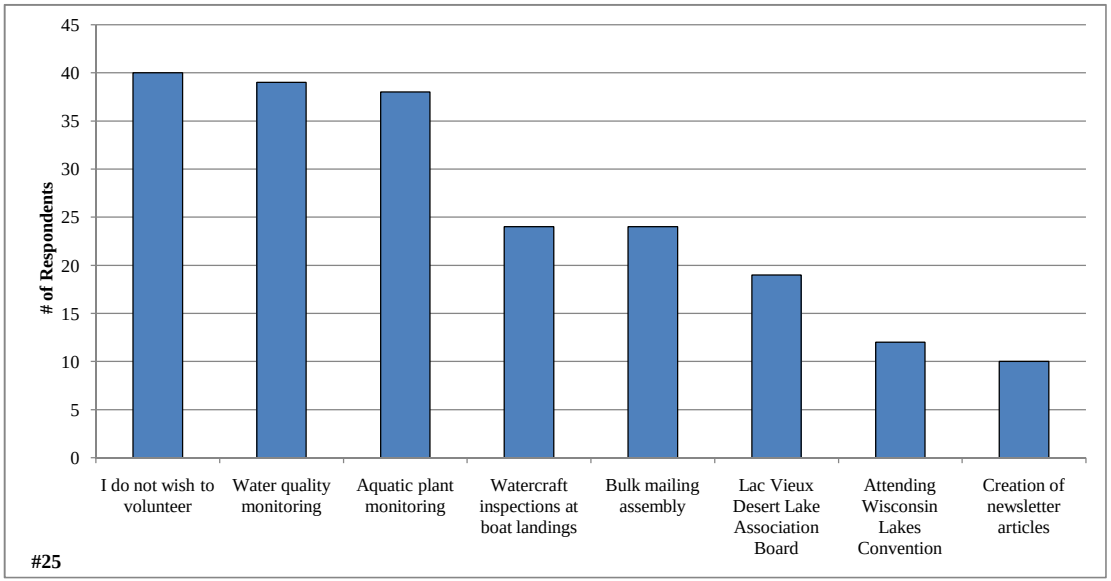
#24 How informed has the Lac Vieux Desert Lake Association kept you, regarding issues with Lac Vieux Desert and its management?

	Total	%
1 - Not Informed	8	*6.4*
2	19	*15.2*
3 - Adequately Informed	51	*40.8*
4	22	*17.6*
5 - Highly Informed	25	*20.0*
	125	*100.0*



#25 Please circle the activities you would be willing to participate in if called upon.

	Total
I do not wish to volunteer	40
Water quality monitoring	39
Aquatic plant monitoring	38
Watercraft inspections at boat landings	24
Bulk mailing assembly	24
Lac Vieux Desert Lake Association Board	19
Attending Wisconsin Lakes Convention	12
Creation of newsletter articles	10
	206



Stakeholder Survey Comments

Survey Number	2g Comment	10m Comment	15p Comment	16r Comment	17r Comment
1					
2				LOSS OF LAKE LEVEL	LAKE LEVEL
3					
4				LOW WATER	LOW WATER
5				SPEARING	LOSS OF SHORELINE
6				LOW WATER	LOW WATER
7				LOW WATER	LOW WATER
8				LOW WATER	LOW WATER
9				DAM	
11				LOW WATER	LOW WATER
12					
13					LOW WATER
14					
15					
16	4 SEASON CABIN				
17					SPEARING
18					
19					LOW WATER
20					
21					
22					
23					
24					LOW WATER
25				SPEAR FISHING	
26					
27				SPEAR FISHING	
28					
29					
30				LOW WATER	LOW WATER
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					
41					
42				LOW WATER	LOW WATER
43					LOW WATER
44					LOW WATER
45					
46					
47					
48					
49					
50					LOW WATER
51					
52					LOW WATER
53					
54					
55					
56				LOW WATER	
57				SPEARING	SPEARING
58					
59					
60					

Survey Number	2g Comment	10m Comment	15p Comment	16r Comment	17r Comment
61					
62					
63					
64					
65					
66					LOW WATER
67					
68					
69					
70				LOW WATER	LOW WATER
71				LOW WATER	LOW WATER
72					LOW WATER
73					
74				LOW WATER	LOW WATER
75					
76					
77				LOW WATER	LOW WATER
78					LOW WATER
79		FISH OTHER LAKES			
80					
81					
82					
83					
84				LOW WATER	
85					
86					
87					
88					
89					
90					
91					
92					LOW WATER
93				LOW WATER	LOW WATER
94					LOW WATER
95					
96					
97					
98					
99				LOW WATER	LOW WATER
100					
101					
102					
103				LOW WATER	LOW WATER
104					LOW WATER
105				LOW WATER	LOW WATER
106					
107					
108				LOW WATER	LOW WATER
109					
110					
111					LOW WATER/SPEARING
112					
113				LOW WATER	
114					
115					
116				LOW WATER	LOW WATER
117					
118					
119					SPEARING
120					

Survey Number	2g Comment	10m Comment	15p Comment	16r Comment	17r Comment
121					
122					
123					
124					
125					
126					SEPTIC SYSTEMS
127					
128					WALLEYE FISH STOCKING
129					
130					
131					
132					
133					

General Comments

4. Very unhappy with low water level.

5. We put out 10 -10 feet pieces each year. This year when taking the pier in 5 ½ pieces were in muck. That's 50 ½ feet of muck. We need water. Many years we can not get our boat close to the dock. What can we do?

7. Feel H2O level is a major issue affecting many
Aspects of our lake:
AIS growth and spreading
Ability to fish
Recreational boating
Recreational swimming
Week growth (excessive)
Decline in property values and ability to market/sell
Added expense of maintaining access – docks/lifts, etc…

8. This survey emphasizes water quality from an aquatic stand point. There seems to be an increase in water clarity that impacts the depth which certain plants grow (mainly grass beds). There also have been several years of massive nail die offs. Then of course there's the on going issue of water levels impacted by both drought and Native American wild rice planting. The degradation of desirable aquatic plants started before the most recent issue of Eurasian Milfoil. It's difficult to judge what results from the natural progression of a lake versus the impact from man.

10. Would like to hear more on (AIS). What is currently being done? Where it has been found? What other plant problems and other specie problems have arose? What is the (LVD) water quality at this time?

11. Water level is most important. Invasive species also.

15. I have heard that fishing was better years ago. We fish mostly for panfish. I do occasionally fish for Musky and Walleye without much success. I am still trying to learn where to fish and the best fishing techniques. We really love it up there and enjoy it very much. Used to fish big sand a lot – what success have they had with their Eurasian milfoil problem?

17. In some parts of lake water is sheet out because of large amount of weeds. Some bays these weeds or rotted stinky and impossible. Would like to let land owners be able to cut weeds and clean up messes. Control Spearing.

30. Water level needs to be increased.

31. I believe the LVDLA is doing a good job. Keep on top (things).

33. I would like to see the lake level back up to the level it was at in 2001, 2002. I would also like to see continued efforts in increasing walleye population. I love the lake and am glad to see people are committed to its well being.

34. We need more water – as do many area lakes.

38. We have lost the tranquility and vegetation of this lake to the high powered musky fishing boats. In return we have gained noise and water pollution loss of our natural vegetation and food for fish and ducks, wildlife and obtained the gift of AIS. We also have lost our walleye population to spearing and removal of their spawn. What do we do about that?

39. Thank you for your continued effort to make Lac Vieux Desert the best it can be for all of us enjoying the lake!

41. I do not understand how a water draw down (if permanent) would help. Deeper the water the fewer the weeds. Only the U.S. government would be dumb enough to lower the water level of an already shallow lake of 4000 acres to grow 40 acres of wild rice!!!

42. Not permanent residents and live 190 miles away. We are of an age where we would not be much help in any area. We have always respected our northern purchase and love that lake, but being younger and there for a longer duration of a stay would have allowed us to help more.

43. Mainly concerned with the very poor condition of the perch fisher. It's been bad for over 7 to 8 year and thus we hardly fish to lake anymore.

44. DNR management of our lake is not beneficial to our lake.

Drawing down water levels for the growth of rice has left our lake in a precarious position during the cool summer of 2009. Lower lake levels and cool water temps have allowed light penetration deeper and aquatics have flourished.

45. I think "nature" has a lot to do with a lot of conditions we face on our lake. 1. Low lake levels 2. Cool spring means less weedy bays 3. Warm spring means more weed choke bays 4. The more you mess with nature the more it gets screwed up. 5. Keep people using common sense and " no littering" on ICE or open water. For instance "Common Sense: people.

50. The impact of lower water levels because of weather conditions and the tribe lowering the lake level for their wild rice program has hurt the lake. Lake access is hard on many of the landing. This shallow water causes props to hit and stir the bottom up. My frontage of mostly rock is collapsing into the lake causing the shoreline and vegetation to fall into the lake. Please see if we can raise the dam and try to bring the level up.

58. Lac Vieux Desert has always been a weedy lake. I have lived here for 94 yeas. And don't think it has changed much as far as week conditions. Water level will make week conditions seem much thicker when water level is high weeds will seem less thick, but they are still there. I don't think any control of our natural week growth is needed, only natural week and plants should be controlled. Boat landing are whats spreading all on native plants and animals. All boats should be inspected before entering, and pay a fee for same.

60. Have more down and out of state people take it upon themselves to show more respect for the lake and the people who live here year round. Pick up after themselves be it weeds, garbage, etc. Also, remember that weeds as a rule mean good fish habitat. I have fished on another lake where milfoil and cabbage weeds have been removed and have seen the fishing suffer greatly, so careful assessment is very important.

61. I am concerned about excessive weed growth and invasive species such as Eurasian Milfoil on Lac Vieux Desert. I am in favor of aggressive management, but, unsure of the effects of chemical or biological treatment.

62. My house sits on the lake. I used to be able to fish off my pier and dock my boat. Now I have to leave my house to get on the lake. I came here to retire and fish and now I can't enjoy fishing from my yard because the water has receded so far.

63. Since the Indians were able to lower the lake water level this lake has deteriorated. Lower water level has increased week growth. Indian spearing ruined the walleye fishing. If things don't change this lake will be ruined.

66. Since the water levels of the lake have been drawn down to support the re-introduction of wild rice, light penetration into the water has increased, promoting vastly increased weed growth. Some areas of the lake that hold fish have become largely unfishable. It has become difficult for walleye to spawn on the narrow rock perimeter of the south shore. It is also difficult to load boats on resident's shore stations.
The increased proliferation of coontail and string weed make it difficult to fish. It isn't just milfoil that is becoming a problem. Cabbage weed is finding it difficult to compete for room to grow.

68. Milfoil is a big problem and needs to be taken care of . Thank you for your efforts in this matter.

70. I have had my place since 1967, when I was 29 years old. I love the lake and have had a lot of fun on it over the years, and I'm happy to see the area has not become overly commercialized (such as Minocqua). The low lake level is a problem for us and all the seaweed makes for difficult boating too.

71. Lake level and aquatic weed growth are both severely affecting the quality of the lake. I cannot imagine my kids water skiing on the lake, given the weeds. Bays like Slaughter and Thunder are choked with weeds as is the east side of the islands and sw corner bay. Fishing actually seems better than 1970s and 1980s, except the crappies are gone. We have seen more large muskies – 38-50 inches than in past years. Also LMbass and more smallmouths. Recommend raising muskie length to 50" or totally catch and release.

74. Most important issue is the regulating of the water level too low!! Please do what you can to address this issue. I know the Native Americans requested this for several years ago. Please do what you can to not let it be renewed. Thank you for everything you all do!!

75. Thank you for the initiatives of the association.

76. 15 years ago we could go and catch our limit of pan fish. (No problem). Or at least have a good day of fishing. That is no longer true, ya we, once in a while will still have a good day. The water level has gone down and the weeds have taken over. If I was around more often I would maybe volunteer for something. I don't live on the lake and I know that doesn't matter I still enjoy the lake. I know we all need to do our part. But, my taxes have tripled from 15 years ago I would hope some of that money is going towards the lake. Thanks for the update. Sorry this is late. Keep up the good work!!!

77. When you can keep the water level up and the Indians, to stop spearing, I will join, and not before. We as non-residents pay for the schools, and could not even vote on the issue. What's wrong with this picture. Get your donation from the business in the area. For our tax dollars, all we get is the roads plowed in winter, when we don't hardly ever come.

80. I'm at the lake so seldom I'm not sure what I could do!

85. When they lowered the lake level it caused my shore to grow up into reed sand weeds. I can no longer use my shore station. I am required to row my boat approximately 200' before I can run my 4 hp motor. The first 42 years I owned the property I could start my 40 hp boat tied to my dock.

86. Outlet Bay/Patterson Bay has been a disaster for years – except for the year someone must have sneaked in a herbicide. That year was the year of a huge crayfish population. Whether a coincidence is something we are unsure of knowing. I realize it is the bay that feeds into the Wisconsin River, but there must be a way to moderate the weeds. Recreational activities and fishing have been severely curtailed. How far along are we with the "wild rice program"? Can the water being let out at the dam be reduced? Thank you to all of the dedicated board members that have helped our lake!!! Could the annual August Fest be dedicated to Chuck Chrisien in some way? The Chuck Chrisien annual august Fest? Or some kind of memorial?

94. I would like to see lake water levels prior to 2002 return. Also like to see continued walleye planting each year.

97. I would like to receive more newsletters we only received one last year and we pay member dues to know what's going on with Lac View Desert area. More get togethers would be nice especially in winter months to benefit Lac View Desert Association. Note: there are proving facts on lakes that have catch and release, employment a program to have catch and release 5 -10 years this lake would change dramatically. The fishing could be as good as it was in the 40s and 50s, the resorts and economy will improve a lot. Also to inspect campgrounds for people taking way more than their limits on fish.

99. In 1996 we had a long, cold, winter. The ice went out on May 16th. The ice 5' thick and with low water levels we had a large freeze off. It took years for the fish and weeds to come back. This could happen again with low water levels.

102. The fishing is good but not what I remember in the 60s, 70s while staying at Caskey's (Sylvan rest). I also remember hearing stories from before that from my grandfather. I am supportive to increase the stocking program for walleye and putting a slot limit on walleye and northern (turn back the larger fish). As is, we now turn back the walleye we catch > 21" and most all northern and all muskie.

103. Since 1993 when I put in my pier the lake level has dropped 18-24" on the water marks on my pier. I sometimes can't use my shore station lift because off shallow water. Since rice growing in Rice Bay the water level was lowered. The sun then produces more weeds and less O2. that fish need. I sued to be able to catch fish off my pier (Mich side by boat ramp), now the shore is mucky, full of snails and with shallow water. Fishing is terrible despite what " certain sources say". Fish are small and big fish are far and few between. We need to raise the dam higher to hold more water in the lake. Damage to props and boat bottoms has increased due to more exposed rocks and the weed growth is terrible because of shallow, warmer water. I'm thinking of selling – I am disgusted!

104. Lac Vieux Desert has of course changed over the last 40 years. Some of the things have been allowed by the powers that be even when these things have been reported – the filling in of wetlands is one serious one affecting the lake when the wetlands are destroyed buildings go up. We lands are important for water quality, animals and birds that live there also. The weeds growth in rice Bay has really thickened so boat traffic is all but impossible. The rice has also spread considerably this year. There was a rather large wet land along the shore before Misery Bay and all along the shore up Misery bay. Trees were cut and large amounts of fill put in the

area. Too bad. Thanks for giving us a chance to speak up on lots of things. Also, the law says buildings must be at least 50' from high water mark. I don't think that law has always been followed.
106. Thank you for your efforts!

108. The lake level is too low hence massive weed growth. Eurasian water milfoil was found in thunder Bay. Why not close that boat landing until it's eradicated so it doesn't spread across the lake. The Lake Association should look into starting a fish hatchery of its own. A portable hatchery with a rearing pond would be ideal. Thousands of fingerlings and millions of fry. Just think of it for years to come!!! Walleye!! Walleye!! Walleye!!!

110. I think most of the problems on LVD are related to the excessive plant growth. It makes most recreational boating almost impossible. While some week growth may be good fish habitat, I have to believe that the amount of weeds is not conducive to good fishing. Most of LVD is very shallow, so I do not know what the solution is. The Association has a difficult task to address these issues.

111. 1. We need to eliminate spearing of walleyes.
2. We need to maintain lake at higher levels.
3. We need better fish population surveys both panfish and game fish impression that there are fewer fish than years ago.
4. fishing in general is not as good as it used to be. Substantiate w/surveys.
5. do not reduce walleye bag limit below 2 per day.
6. Increase stocking of walleye.

113. I think the lake water level should be raised up to its previous level now hat the Indians have established their rice in Rice Bay. It would let the perch spawn in the Bulrush or cones as they previously did before the lake draw down, and it would help everyone with the launching and boat docking.

119. the lake has been negatively impacted by the DNR yearly taking spawn and then not restocking the lake on a regular basis. Secondly, spearing has had a very serious negative impact.

125. I'm getting too old to participate anymore. In my 80s. I've been wondering why the last 8-10 years they let so much water out of the dam. That's where I think some of the problem with vegetation lies.

128. We need to keep the lake at a higher lake level so we can deal with dry summers. Based on fishing pressure we need a stronger stocking program. It's a shame that we can't get an agreement set with the Tribe to maintain a sound stocking program. They have a good hatchery on the lake.

129. Unfortunately we are part time summer residents and although we are very concerned about our lake our primary residence is 7 hours away – thus making participation almost impossible. We will keep in touch an dif we feel we can contribute on a very part time basis that will definitely happen. Rob, your efforts and all helping you are greatly appreciated. We look forward to Lac Vieux Desert once again being the lake it deserves to be.

130. I very much dislike the lower water levels of the past several year. I think that has a significant effect on the tremendous amount of weed growth. I have not closely followed the tribal situation where the water level is concerned. I would simply like to the level increased.

C

APPENDIX C

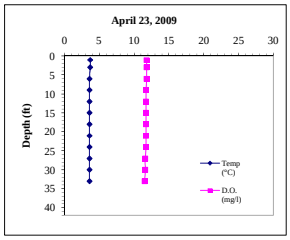
Water Quality Data

Lac Vieux Desert

Date: 04-23-09
Time: 10:00:AM
Weather: 99% Clouds, 44°F
Ent: BTB **Verf:**

Max Depth (ft): 34.0
LVDLS Depth (ft): 3.0
LVDLB Depth (ft): 31.0
Secchi Depth (ft): 9.1

Depth (ft)	Temp (°C)	D.O. (mg/l)	pH	Sp. Cond (µS/cm)
1.0	3.7	11.8	7.1	82
3.0	3.7	11.8	7.1	82
6.0	3.6	11.8	7.5	82
9.0	3.6	11.7	7.7	82
12.0	3.6	11.7	7.8	83
15.0	3.6	11.7	7.8	83
18.0	3.6	11.7	8.3	83
21.0	3.6	11.7	8.3	83
24.0	3.6	11.7	8.3	83
27.0	3.6	11.6	8.5	82
30.0	3.6	11.6	8.5	83
33.0	3.6	11.5	8.5	83



Parameter	LVDLS	LVDLB
Total P (µg/L)	26.000	79.000
Dissolved P (µg/L)	ND	ND
Chl a (µg/L)	8.06	NA
TKN (µg/L	470.00	450.00
NO3+NO2-N (µg/L)	ND	ND
NH3-N (µg/L)	ND	ND
Total N (µg/L)	470.00	450.00
Lab Cond. (µS/cm)	89	89
Lab pH	7.58	7.66
Alkal (mg/l CaCO3)	40	40
Total Susp Sol (mg/l)	2	3
Calcium (mg/l)	10.1	NA

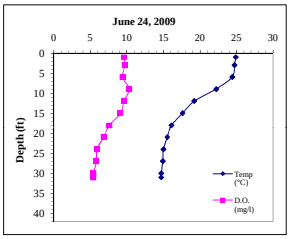
Data collected by TAH and EJH (Onterra)

Lac Vieux Desert

Date: 06-24-09
Time: 9:15
Weather: 80°F, light breeze, 100% sun
Ent: BTB **Verf:**

Max Depth (ft): 32.9
LVDLS Depth (ft): 3.0
LVDLB Depth (ft): 31.0
Secchi Depth (ft): 10.6

Depth (ft)	Temp (°C)	D.O. (mg/l)	pH	Sp. Cond (µS/cm)
1.0	24.9	9.6	8.9	88
3.0	24.7	9.7	8.9	88
6.0	24.4	9.4	8.9	88
9.0	22.2	10.3	8.9	86
12.0	19.2	9.6	8.4	87
15.0	17.6	9.1	7.9	87
18.0	16.1	7.6	7.6	87
21.0	15.5	6.8	7.5	87
24.0	15.0	5.9	7.3	87
27.0	14.9	5.8	7.3	87
30.0	14.7	5.4	7.2	87
31.0	14.7	5.4	7.2	87



Parameter	LVDLS	LVDLB
Total P (µg/L)	23.000	22.000
Dissolved P (µg/L)	NA	NA
Chl a (µg/L)	3.05	NA
TKN (µg/L	NA	NA
NO3+NO2-N (µg/L)	NA	NA
NH3-N (µg/L)	NA	NA
Total N (µg/L)	NA	NA
Lab Cond. (µS/cm)	NA	NA
Lab pH	NA	NA
Alkal (mg/l CaCO3)	NA	NA
Total Susp Sol (mg/l)	ND	ND
Calcium (mg/l)	NA	NA

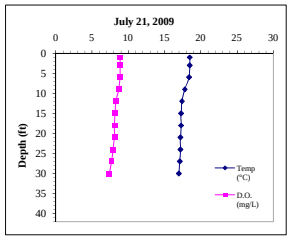
Data collected by BTB and TWH (Onterra)

Lac Vieux Desert

Date: 07-21-09
Time: 9:45
Weather: 70°F, 75% clouds, breezy
Ent: BTB **Verf:**

Max Depth (ft): 31.6
LVDLS Depth (ft): 3.0
LVDLB Depth (ft): 29.0
Secchi Depth (ft): 6.8

Depth (ft)	Temp (°C)	D.O. (mg/l)	pH	Sp. Cond (µS/cm)
1.0	18.5	8.9	8.7	88.0
3.0	18.5	8.9	8.6	88.0
6.0	18.4	8.9	8.6	88.0
9.0	17.8	8.7	8.6	87.0
12.0	17.4	8.3	8.4	87.0
15.0	17.3	8.2	8.3	88.0
18.0	17.3	8.1	8.3	87.0
21.0	17.2	8.1	8.3	87.0
24.0	17.2	7.9	8.3	87.0
27.0	17.1	7.7	8.1	87.0
30.0	17.0	7.4	8.1	88.0



Parameter	LVDLS	LVDLB
Total P (µg/L)	27.000	20.000
Dissolved P (µg/L)	ND	NA
Chl a (µg/L)	4.440	NA
TKN (µg/L	520.000	480.000
NO3+NO2-N (µg/L)	ND	ND
NH3-N (µg/L)	18.000	24.000
Total N (µg/L)	520.000	480.000
Lab Cond. (µS/cm)	91.000	89.000
Lab pH	8.520	8.060
Alkal (mg/l CaCO3)	40.600	39.900
Total Susp Sol (mg/l)	ND	ND
Calcium (mg/l)	NA	NA

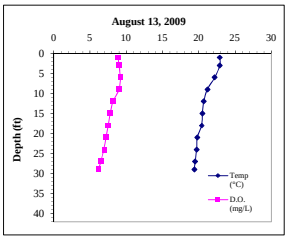
Data collected by TAH and AAH (Onterra)

Lac Vieux Desert

Date: 08-13-09
Time: 11:45
Weather: 80°F, 100% sun, windy
Ent: BTB **Verf:**

Max Depth (ft): 31.2
LVDLS Depth (ft): 3.0
LVDLB Depth (ft): 29.0
Secchi Depth (ft): 10.0

Depth (ft)	Temp (°C)	D.O. (mg/l)	pH	Sp. Cond (µS/cm)
1.0	22.9	8.9	8.5	87.0
3.0	22.9	9.0	8.5	87.0
6.0	22.2	9.2	8.6	87.0
9.0	21.2	9.0	8.5	86.0
12.0	20.7	8.2	8.0	86.0
15.0	20.5	7.8	7.8	87.0
18.0	20.4	7.5	7.7	86.0
21.0	19.8	7.2	7.6	86.0
24.0	19.7	6.9	7.6	86.0
27.0	19.5	6.5	7.5	87.0
29.0	19.4	6.2	7.4	86.0



Parameter	LVDLS	LVDLB
Total P (µg/L)		
Dissolved P (µg/L)		
Chl a (µg/L)		
TKN (µg/L		
NO3+NO2-N (µg/L)		
NH3-N (µg/L)		
Total N (µg/L)		
Lab Cond. (µS/cm)		
Lab pH		
Alkal (mg/l CaCO3)		
Total Susp Sol (mg/l)		
Calcium (mg/l)		

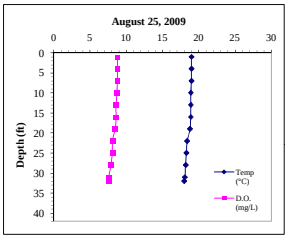
Data collected by BTB and CRS (Onterra)
Water Chemistry taken on this day was not processed (shippment error)

Lac Vieux Desert

Date: 08-25-09
Time: 9:40
Weather: 62 F, 100 % Clouds, Light Rain
Ent: BTB **Verf:**

Max Depth (ft): 32.7
LVDLS Depth (ft): 3.0
LVDLB Depth (ft): 31.0
Secchi Depth (ft): 9.0

Depth (ft)	Temp (°C)	D.O. (mg/l)	pH	Sp. Cond (µS/cm)
1.0	19.0	8.8	8.7	86.0
4.0	19.0	8.8	8.7	86.0
7.0	19.0	8.8	8.7	86.0
10.0	18.9	8.7	8.7	86.0
13.0	18.9	8.6	8.7	86.0
16.0	18.9	8.6	8.7	86.0
19.0	18.8	8.5	8.6	86.0
22.0	18.4	8.1	8.5	86.0
25.0	18.3	8.1	8.4	86.0
28.0	18.2	7.9	8.3	85.0
31.0	18.1	7.6	8.1	86.0
32.0	18.0	7.6	8.1	86.0



Parameter	LVDLS	LVDLB
Total P (µg/L)	33.000	30.000
Dissolved P (µg/L)	NA	NA
Chl a (µg/L)	3.190	NA
TKN (µg/L	NA	NA
NO3+NO2-N (µg/L)	NA	NA
NH3-N (µg/L)	NA	NA
Total N (µg/L)	NA	NA
Lab Cond. (µS/cm)	NA	NA
Lab pH	NA	NA
Alkal (mg/l CaCO3)	NA	NA
Total Susp Sol (mg/l)	ND	4.000
Calcium (mg/l)	NA	NA

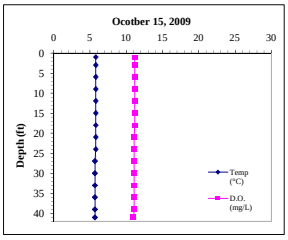
Data collected by DAC and TWH (Onterra)

Lac Vieux Desert

Date: 10-15-09
Time: 12:15
Weather: 38°F, 100% clouds, breezy
Ent: BTB **Verf:**

Max Depth (ft): 42.0
LVDLS Depth (ft): 3.0
LVDLB Depth (ft): 39.0
Secchi Depth (ft): 9.7

Depth (ft)	Temp (°C)	D.O. (mg/l)	pH	Sp. Cond (µS/cm)
1.0	5.8	11.2	8.2	82.0
3.0	5.8	11.2	8.3	82.0
6.0	5.8	11.2	8.3	82.0
9.0	5.8	11.2	8.3	82.0
12.0	5.8	11.2	8.3	82.0
15.0	5.8	11.2	8.3	82.0
18.0	5.8	11.2	8.2	82.0
21.0	5.8	11.1	8.2	82.0
24.0	5.8	11.1	8.2	82.0
27.0	5.7	11.1	8.2	83.0
30.0	5.7	11.1	8.2	82.0
33.0	5.7	11.1	8.2	83.0
36.0	5.7	11.1	8.2	82.0
39.0	5.7	11.1	8.2	83.0
41.0	5.7	11.0	8.2	83.0



Parameter	LVDLS	LVDLB
Total P (µg/L)	22.000	68.000
Dissolved P (µg/L)	NA	NA
Chl a (µg/L)	3.500	NA
TKN (µg/L	NA	NA
NO3+NO2-N (µg/L)	NA	NA
NH3-N (µg/L)	NA	NA
Total N (µg/L)	NA	NA
Lab Cond. (µS/cm)	NA	NA
Lab pH	NA	NA
Alkal (mg/l CaCO3)	NA	NA
Total Susp Sol (mg/l)	ND	2.000
Calcium (mg/l)	NA	NA

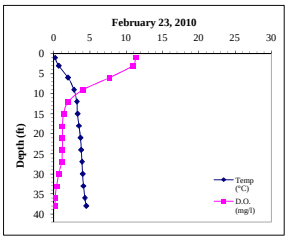
Data collected by TAH (Onterra)

Lac Vieux Desert

Date: 02-23-10
Time: 9:00
Weather: 100% Clouds, light wind, 14°F
Ent: BTB **Verf:**

Max Depth (ft): 39.0
LVDLS Depth (ft): 3.0
LVDLB Depth (ft): 36.0
Secchi Depth (ft): 6.9

Depth (ft)	Temp (°C)	D.O. (mg/l)	pH	Sp. Cond (µS/cm)
1.0	0.2	11.3	6.5	100.0
3.0	0.7	10.9	6.6	98.0
6.0	2.0	7.7	6.5	95.0
9.0	2.8	4.1	6.4	98.0
12.0	3.2	2.0	6.4	104.0
15.0	3.3	1.4	6.4	106.0
18.0	3.5	1.2	6.4	108.0
21.0	3.7	1.2	6.4	112.0
24.0	3.8	1.2	6.4	112.0
27.0	3.9	1.1	6.4	113.0
30.0	4.0	0.7	6.4	115.0
33.0	4.1	0.4	6.4	118.0
36.0	4.3	0.2	6.4	123.0
38.0	4.5	0.2	6.5	135.0



Parameter	LVDLS	LVDLB
Total P (µg/L)		
Dissolved P (µg/L)		
Chl a (µg/L)		
TKN (µg/L		
NO3+NO2-N (µg/L)		
NH3-N (µg/L)		
Total N (µg/L)		
Lab Cond. (µS/cm)		
Lab pH		
Alkal (mg/l CaCO3)		
Total Susp Sol (mg/l)		
Calcium (mg/l)		

Data collected by TAH and EJH (Onterra)
Ice: 1.5 ft

Water Quality Data

2007 Parameter	Surface Count	Surface Mean	Bottom Count	Bottom Mean
Secchi Depth (feet)	7	8.9	NA	NA
Total P (µg/L)	5	26.2	5	43.8
Dissolved P (µg/L)	2	ND	1	ND
Chl a (µg/L)	5	4.4	NA	NA
TKN (µg/L	2	495.0	2	465.0
NO3+NO2-N (µg/L)	2	ND	2	ND
NH3-N (µg/L)	1	18.0	1	24.0
Total N (µg/L)	2	495.0	2	465.0
Lab Cond. (µS/cm)	2	90.0	2	89.0
Lab pH	2	8.1	2	7.9
Alkal (mg/l CaCO3)	2	40.3	2	40.0
Total Susp Sol (mg/l)	1	2.0	3	3.0
Calcium (µg/L)	1	10.1	NA	NA

Wisconsin Trophic State Index (WTSI)

Year	TP	Chla	SD
1979	55.35	54.28	53.92
1993			48.02
2000	53.29	43.79	44.49
2001	57.29	50.09	
2002	54.42	51.12	
2004	54.87		
2009	53.79	44.29	45.77
All Years (weighted)	53.52	49.27	49.76
WI Natural Lakes	53.19	54.23	47.33
Northeast Region	51.05	51.49	45.61

Morphological / Geographical Data

Parameter	
Acreage	4,247
Volume (acre-feet)	49,127
Perimeter (miles)	
Shoreland Development	
Maximum Depth (feet)	40
County	Vilas County
WBIC	1631900
Lillie Mason Region(1983)	
Nichols Ecoregion(1999)	

Watershed Data

WiLMS Class	Acreage	kg/yr	lbs/yr
Forest	13166.0	480	1056.0
Open Water	4247.0	546	1135.0
Pasture/Grass	15.0	2	4.0
Mixed Agriculture	4.0	1	2.0
Low Density Urban	154.0	6	13.0
Wetland	4295.0	174	383.0

Watershed to Lake Area 4:1

Year	Secchi (feet) Growing Season Count	Secchi (feet) Growing Season Mean	Secchi (feet) Summer Count	Secchi (feet) Summer Mean	Chlorophyll a (µg/L) Growing Season Count	Chlorophyll a (µg/L) Growing Season Mean	Chlorophyll a (µg/L) Summer Count	Chlorophyll a (µg/L) Summer Mean	Phosphorus (µg/L) Growing Season Count	Phosphorus (µg/L) Growing Season Mean	Phosphorus (µg/L) Summer Count	Phosphorus (µg/L) Summer Mean	Phosphorus (µg/L) Spring Turnover Count	Phosphorus (µg/L) Spring Turnover Mean	Phosphorus (µg/L) Fall Turnover Count	Phosphorus (µg/L) Fall Turnover Mean
1979	1	5	1	5	1	13.49	1	13.49	1	33	1	33				
1993	13	6.5	9	7.53												
2000	4	8.53	3	9.62	4	4.25	3	3.33	4	26.5	3	25.33				
2001					8	9.29	6	7.72	8	43.38	6	42.33				
2002	2	4.40	0		9	10.28	7	8.85	9	31.44	7	29.29				
2003	2	4.25	0													
2004	2	6.75	1						2	20.5	1	31				
2009	5	9.04	3	8.80	5	4.45	3	3.56	7	26.14	5	27				
All Years (weighted)		5.1		6.7		7.7		6.9		25.9		26.1				
WI Natural Lakes				7.9				13.4				25				
Northeast Region				8.9				9.3				19				

Summer 2008 N: 520.000
Summer 2008 P: 27.000

Summer 2008 N:P 19 :1

D

APPENDIX D

Watershed Analysis WiLMS Results

Date: 8/16/2010 Scenario: Lac Vieux Desert Current

Lake Id: 1631900
Watershed Id: 0

Hydrologic and Morphometric Data

Tributary Drainage Area: 17634.0 acre
Total Unit Runoff: 14.00 in.
Annual Runoff Volume: 20573.0 acre-ft
Lake Surface Area <As>: 4247.0 acre
Lake Volume <V>: 49128.0 acre-ft
Lake Mean Depth <z>: 11.6 ft
Precipitation - Evaporation: 5.5 in.
Hydraulic Loading: 22519.5 acre-ft/year
Areal Water Load <qs>: 5.3 ft/year
Lake Flushing Rate <p>: 0.46 1/year
Water Residence Time: 2.18 year
Observed spring overturn total phosphorus (SPO): 26.0 mg/m^3
Observed growing season mean phosphorus (GSM): 27.7 mg/m^3
% NPS Change: 0%
% PS Change: 0%

NON-POINT SOURCE DATA

Land Use	Acre	Low	Most Likely	High	Loading %	Low	Most Likely	High
	(ac)	Loading (kg/ha-year)				Loading (kg/year)		
Row Crop AG	0.0	0.50	1.00	3.00	0.0	0	0	0
Mixed AG	4.0	0.30	0.80	1.40	0.1	0	1	2
Pasture/Grass	15.0	0.10	0.30	0.50	0.2	1	2	3
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)	154	0.05	0.10	0.25	0.5	3	6	16
Wetlands	4295.0	0.10	0.10	0.10	14.8	174	174	174
Forest	13166.0	0.05	0.09	0.18	40.7	266	480	959
Lake Surface	4247.0	0.10	0.30	1.00	43.8	172	516	1719

POINT SOURCE DATA

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

SEPTIC TANK DATA

Description		Low	Most Likely	High	Loading %
Septic Tank Output (kg/capita-year)		0.30	0.50	0.80	
# capita-years	0.0				
% Phosphorus Retained by Soil		98.0	90.0	80.0	
Septic Tank Loading (kg/year)		0.00	0.00	0.00	0.0

TOTALS DATA

Description	Low	Most Likely	High	Loading %
Total Loading (lb)	1358.7	2597.8	6332.8	100.0
Total Loading (kg)	616.3	1178.3	2872.6	100.0
Areal Loading (lb/ac-year)	0.32	0.61	1.49	
Areal Loading (mg/m^2-year)	35.86	68.56	167.14	
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)	979.8	1461.0	2543.6	100.0
Total NPS Loading (kg)	444.4	662.7	1153.8	100.0

Phosphorus Prediction and Uncertainty Analysis Module

Date: 8/16/2010 Scenario: 39
Observed spring overturn total phosphorus (SPO): 26.0 mg/m^3
Observed growing season mean phosphorus (GSM): 27.7 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	22	54	-6	-22
Canfield-Bachmann, 1981 Natural Lake	11	18	34	-10	-36
Canfield-Bachmann, 1981 Artificial Lake	11	17	30	-11	-40
Rechow, 1979 General	3	5	12	-23	-83
Rechow, 1977 Anoxic	15	28	69	0	0
Rechow, 1977 water load<50m/year	6	11	26	-17	-61
Rechow, 1977 water load>50m/year	N/A	N/A	N/A	N/A	N/A
Walker, 1977 General	10	20	48	-6	-23
Vollenweider, 1982 Combined OECD	9	16	33	-11	-41
Dillon-Rigler-Kirchner	5	10	26	-16	-62
Vollenweider, 1982 Shallow Lake/Res.	7	12	27	-15	-56
Larsen-Mercier, 1976	9	17	42	-9	-35
Nurnberg, 1984 Oxic	5	10	24	-18	-65

Lake Phosphorus Model	Confidence Lower Bound	Confidence Upper Bound	Parameter Fit?	Back Calculation (kg/year)	Model Type
Walker, 1987 Reservoir	13	43	Tw	0	GSM
Canfield-Bachmann, 1981 Natural Lake	6	52	FIT	1	GSM
Canfield-Bachmann, 1981 Artificial Lake	5	49	FIT	1	GSM
Rechow, 1979 General	3	10	L	0	GSM
Rechow, 1977 Anoxic	17	55	FIT	0	GSM
Rechow, 1977 water load<50m/year	7	21	FIT	0	GSM
Rechow, 1977 water load>50m/year	N/A	N/A	N/A	N/A	N/A
Walker, 1977 General	10	41	FIT	0	SPO
Vollenweider, 1982 Combined OECD	8	31	FIT	0	ANN
Dillon-Rigler-Kirchner	6	20	L	0	SPO
Vollenweider, 1982 Shallow Lake/Res.	6	24	FIT	0	ANN
Larsen-Mercier, 1976	11	33	P Pin	0	SPO
Nurnberg, 1984 Oxic	5	20	FIT	0	ANN

Water and Nutrient Outflow Module

Date: 8/16/2010 Scenario: 27
Average Annual Surface Total Phosphorus: 27.7mg/m^3
Annual Discharge: 2.25E+004 AF => 2.78E+007 m^3
Annual Outflow Loading: 1623.0 LB => 736.2 kg

E

APPENDIX E

Aquatic Plant Survey Data

Point Number	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Depth (ft)	Sediment type (M=muck, S=Sand, R=Rock	Rope (R); Pole (P); Visual (V)	Notes	Ceratophyllum demersum	Chara sp.	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Heteranthera dubia	Juncus pelocarpus	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton friesii	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton strictifolius	Potamogeton zosteriformis	Ranunculus aquatilis	Sagitaria sp. (rosette)	Schoenoplectus acutus	Schoenoplectus pungens	Spirodela polyrhiza	Vallisneria americana	Zizania palustris	Myriophyllum alterniflorum	Sagittaria cuneata	Freshwater sponge	Filamentous algae
1	46.131812	-89.150639	1	S	P					1	1			1																				V							
2	46.130516	-89.150659	1	S	P																						V														
3	46.129220	-89.150679	3	S	P																			1			1		1		1					1		1			
4	46.127924	-89.150699	2	S	P																			1		1															
5	46.126628	-89.150718	3	S	P				1															1				1		1						1		1			
6	46.125332	-89.150738	2	S	P													1									1						1			1				
7	46.124036	-89.150758	1	S	P				1									1									V						V							
8	46.122740	-89.150778	4	S	P			1									1							1												1				
9	46.121445	-89.150798	5	M	P												1	1									1														
10	46.120149	-89.150818	4	M	P												1														V										
11	46.135685	-89.148715	2	S	P																													1							
12	46.134390	-89.148735	4	S	P																			1												1		1			
13	46.133094	-89.148755	4	S	P																			1										1			1				
14	46.131798	-89.148775	4	S	P																			1		1								1							
15	46.130502	-89.148795	5	S	P											1															1			V			1				
16	46.129206	-89.148815	5	S	P																			1													1				
17	46.127910	-89.148835	5	S	P																			1													1				
18	46.126614	-89.148855	5	S	P						1					1								1			1											1			
19	46.125318	-89.148875	7	M	P		1				1						2									1					1										
20	46.124023	-89.148895	7	M	P		1				1																1	1			1										
21	46.122727	-89.148915	7	M	P						1											V							1		1										
22	46.121431	-89.148935	5	M	P		1				1						1					2					1														
23	46.120135	-89.148954	5	M	P						1															1	V				V										
24	46.118839	-89.148974	3	M	P			1									1	1								1	V									1					
25	46.139559	-89.146791	1	S	P					1										V				1											V						
26	46.138263	-89.146811	3	S	P													1															1								
27	46.136967	-89.146831	4	S	P			1												1														V							
28	46.135672	-89.146851	4	S	P			1			1													1										1			1				
29	46.134376	-89.146871	5	S	P																			1													1				
30	46.133080	-89.146891	5	S	P			1			1																				1						1				
31	46.131784	-89.146911	6	S	P																			1			1	1									1				
32	46.130488	-89.146931	6	S	P																			1													1				
33	46.129192	-89.146951	7	M	P		1				1						2										1														
34	46.127896	-89.146971	9	M	P		1																				1				1										
35	46.126600	-89.146991	9	M	P		1				1															1	1	1														
36	46.125305	-89.147011	9	M	P		1										1										1				1										
37	46.124009	-89.147031	8	M	P		2				1						2														1										
38	46.122713	-89.147051	8	M	P		2				1						2									1					1										
39	46.121417	-89.147071	6	M	P						1						3												1								1				
40	46.120121	-89.147091	5	M	P						1						1					1				1		2													
41	46.142137	-89.144887	2	S	P			1																										V							
42	46.140841	-89.144907	3	S	P																	1											1	V							
43	46.139545	-89.144927	4	S	P															1														1							
44	46.138249	-89.144947	4	S	P													1		1				1										1							
45	46.136953	-89.144967	4	S	P												1			1								1						V							
46	46.135658	-89.144987	5	S	P			1														1						1								1				
47	46.134362	-89.145007	5	S	P																					1														
48	46.133066	-89.145027	6	S	P						1						1							1												1				
49	46.131770	-89.145047	8	M	P						1						1										1	1										1			
50	46.130474	-89.145067	10	M	P		1																				1				1										
51	46.129178	-89.145087	10	M	P		3				1																	1			1										
52	46.127882	-89.145107	9	M	P		1				1						1									1	1				1										
53	46.126586	-89.145127	9	M	P		1										3																								
54	46.125291	-89.145147	9	M	P		1				1						1											1			1										
55	46.123995	-89.145167	8	M	P		1				1						1									1	1		1												
56	46.122699	-89.145187	8	M	P						1															2	1				1										
57	46.121403	-89.145207	8	M	P		1				1						1										1				1										
58	46.120107	-89.145227	14	M	P																										1										
59	46.144715	-89.142982	1	S	P					V										1				V										V							
60	46.143419	-89.143002	2	S	P					1										1														1							
61	46.142123	-89.143022	4	S	P															V														1							
62	46.140827	-89.143042	4	S	P																			1										1							
63	46.139531	-89.143063	4	S	P															V														1							
64	46.138235	-89.143083	5	S	P																			1										V							
65	46.136939	-89.143103	6	S	P			1																1														1			

Point Number	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Depth (ft)	Sediment type (M=muck, S=Sand, R=Rock	Rope (R); Pole (P); Visual (V)	Notes	Ceratophyllum demersum	Chara sp.	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Heteranthera dubia	Juncus pelocarpus	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton friesii	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton strictifolius	Potamogeton zosteriformis	Ranunculus aquatilis	Sagitaria sp. (rosette)	Schoenoplectus acutus	Schoenoplectus pungens	Spirodela polyrhiza	Vallisneria americana	Zizania palustris	Myriophyllum alterniflorum	Sagittaria cuneata	Freshwater sponge	Filamentous algae
66	46.135644	-89.143123	9	S	P		1				1					2											2														
67	46.134348	-89.143143	10	M	P		2				1															1	2														
68	46.133052	-89.143163	10	M	P		1				1					1									1	1	V			1										
69	46.131756	-89.143183	10	M	P		3																							1										
70	46.130460	-89.143203	10	M	P		3				1															1				1										
71	46.129164	-89.143223	10	M	P		1				1					1									1															
72	46.127868	-89.143243	9	M	P		3									3									2						2									
73	46.126573	-89.143263	9	M	P						1					1										1														
74	46.125277	-89.143284	10	M	P		2				1					2									2	1					1									
75	46.123981	-89.143304	9	M	P		1				1					1									2															
76	46.122685	-89.143324	8	M	P		1				1					2									1		1			1										
77	46.121389	-89.143344	8	M	P		2				1																		1	2										
78	46.145997	-89.141098	1	S	P					V														V									V							
79	46.144701	-89.141118	3	S	P																																	1			
80	46.143405	-89.141138	4	S	P																				1															
81	46.142109	-89.141158	5	S	P																			1													1			
82	46.140813	-89.141178	5	S	P																			1																
83	46.139517	-89.141198	7	S	P																					1														
84	46.138221	-89.141218	11	M	P		1																			3		1												
85	46.136926	-89.141239	11	M	P		3									1														1										
86	46.135630	-89.141259	11	M	P		2																			1														
87	46.134334	-89.141279	11	M	P		1				1																													
88	46.133038	-89.141299	11	M	P		2				1																			1										
89	46.131742	-89.141319	11	M	P		2				1														2		2													
90	46.130446	-89.141339	10	M	P		3				2																1													
91	46.129150	-89.141359	10	M	P						1					2									1	1				1										
92	46.127854	-89.141380	11	M	P		1				2																			1										
93	46.126559	-89.141400	10	M	P		3				1															1														
94	46.125263	-89.141420	9	M	P		3				1														2					1										
95	46.123967	-89.141440	9	M	P		2																		1		2			1										
96	46.122671	-89.141460	9	M	P		2				1					1											1			1										
97	46.121375	-89.141480	9	S	P						1					1	1	1								1														
98	46.145983	-89.139233	2	S	P					V																								V							
99	46.144687	-89.139253	3	S	P																			1						1								2			
100	46.143391	-89.139274	4	S	P																	1		1																
101	46.142095	-89.139294	6	S	P																	1		1			1										1		1			
102	46.140799	-89.139314	12	M	P		1																			1	1			1										
103	46.139503	-89.139334	11	M	P		3																				1													
104	46.138207	-89.139354	11	M	P		2									1										1				1										
105	46.136911	-89.139375	11	M	P		3																							2										
106	46.135616	-89.139395	11	M	P		1				1																1			1										
107	46.134320	-89.139415	11	M	P		2																			1				1										
108	46.133024	-89.139435	11	M	P		1				1					2										1	2													
109	46.131728	-89.139455	11	M	P		2				1															2				1										
110	46.130432	-89.139475	10	M	P		1				1															1				1										
111	46.129136	-89.139496	10	M	P		1				1																			1										
112	46.127840	-89.139516	11	M	P		1				2														1					1										
113	46.126545	-89.139536	11	M	P		1				1																			1										
114	46.125249	-89.139556	10	M	P		2				1															1	2			1										
115	46.123953	-89.139576	10	M	P		1																							1										
116	46.122657	-89.139597	11	M	P						1															1														
117	46.147264	-89.137349	1	S	P					V															V									V							
118	46.145969	-89.137369	3	S	P																			1													1			
119	46.144673	-89.137389	5	S	P											1						1					1			1										
120	46.143377	-89.137409	10	S	P		1				1					1										1				1										
121	46.142081	-89.137430	11	M	P		2																							1										
122	46.140785	-89.137450	11	M	P		2																			1				2										
123	46.139489	-89.137470	11	M	P		2				1					1										2				2										
124	46.138193	-89.137490	11	M	P		2				1														2	1				1										
125	46.136897	-89.137510	12	M	P		2				1					2									1	1	1			1										
126	46.135602	-89.137531	11	M	P		1				1															1	1			1										
127	46.134306	-89.137551	12	M	P		2				1														1	1	2													
128	46.133010	-89.137571	12	M	P		2				1															1				1										
129	46.131714	-89.137591	11	M	P		3				1																V			2										
130	46.130418	-89.137612	11	M	P		2				1															1				1										

Point Number	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Depth (ft)	Sediment type (M=muck, S=Sand, R=Rock	Rope (R); Pole (P); Visual (V)	Notes	Ceratophyllum demersum	Chara sp.	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Heteranthera dubia	Juncus pelocarpus	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton friesii	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton strictifolius	Potamogeton zosteriformis	Ranunculus aquatilis	Sagitaria sp. (rosette)	Schoenoplectus acutus	Schoenoplectus pungens	Spirodela polyrhiza	Vallisneria americana	Zizania palustris	Myriophyllum alterniflorum	Sagittaria cuneata	Freshwater sponge	Filamentous algae
131	46.129122	-89.137632	11	M	P		2				2																1	2														
132	46.127826	-89.137652	10	M	P		1				1															1	1				1										
133	46.126530	-89.137672	11	M	P		2				1																	V		1	1										
134	46.125235	-89.137693	11	M	P		2																			2	1				1										
135	46.123939	-89.137713	13	M	P																						1														
136	46.122643	-89.137733	8	S	P			1									1	1	1																						
137	46.151138	-89.135423				NONNAVIGABLE (PLANTS)				V																									V							
138	46.149842	-89.135444				NONNAVIGABLE (PLANTS)				V																									V							
139	46.147250	-89.135484	3	S	P																												V							
140	46.145954	-89.135504	10	M	P		1				1																				1										
141	46.144659	-89.135525	11	M	P		1										1										1				2										
142	46.143363	-89.135545	11	M	P		3																				1														
143	46.142067	-89.135565	11	M	P		2										1										1				1										
144	46.140771	-89.135586	11	M	P		2																				2	V			2										
145	46.139475	-89.135606	12	M	P						1																2	V			1										
146	46.138179	-89.135626	12	M	P		2				1															V					2										
147	46.136883	-89.135646	12	M	P						1																1														
148	46.135587	-89.135667	12	M	P		1				1																1				1										
149	46.134292	-89.135687	12	M	P		1				1																1				1										
150	46.132996	-89.135707	11	M	P		2				1																1	V			2										
151	46.131700	-89.135727	11	M	P		1				1															V	1	2			1										
152	46.130404	-89.135748	11	M	P		1				1																1				1										
153	46.129108	-89.135768	11	M	P		1				1															V	1				2										
154	46.127812	-89.135788	10	M	P		1										2										1	2			2										
155	46.126516	-89.135809	11	M	P		1				1															V	1				2										
156	46.125221	-89.135829	10	M	P		2				1															1	1				2										
157	46.123925	-89.135849	15	M	P																						1														
158	46.122629	-89.135869	7	S	P		1										1																					1				
159	46.152420	-89.133538				NONNAVIGABLE (PLANTS)				V																									V							
160	46.151124	-89.133559	4	S	P																											1	1				1				
161	46.149828	-89.133579	4	S	P																			2						1			2							
162	46.148532	-89.133599	3	S	P												1													1		1	V							
163	46.147236	-89.133620	3	S	P																																			
164	46.145940	-89.133640	15	M	P																																			
165	46.144644	-89.133660	11	M	P		1				1																1	V			1										
166	46.143349	-89.133681	12	M	P		2																								2										
167	46.142053	-89.133701	11	M	P		2				1																1														
168	46.140757	-89.133721	12	M	P		1				1																2	2			1										
169	46.139461	-89.133742	13	M	P		1				1																				2										
170	46.138165	-89.133762	11	M	P		1				1																1	1			1										
171	46.136869	-89.133782	11	M	P		2				1																				1										
172	46.135573	-89.133803	11	M	P		1				1																				1										
173	46.134278	-89.133823	13	M	P		1				1															2	1				1										
174	46.132982	-89.133843	11	M	P		1				1															1	1				2										
175	46.131686	-89.133864	11	M	P		1				1															2	1														
176	46.130390	-89.133884	9	M	P		1				1						3									1					1										
177	46.129094	-89.133904	10	M	P		1				1															V	1				2										
178	46.127798	-89.133925	10	M	P		1										1										1				1										
179	46.126502	-89.133945	12	M	P		2																				1				1										
180	46.125206	-89.133965	10	M	P		2				1																1	2			1										
181	46.123911	-89.133985	13	M	P																						1														
182	46.122615	-89.134006	10	M	P		1																			V	1				1										
183	46.153701	-89.131653				NONNAVIGABLE (PLANTS)				V																									V							
184	46.152406	-89.131674	4	S	P																V			V										2							
185	46.151110	-89.131694	8	M	P			1			2							1								2					1										
186	46.149814	-89.131715	11	M	P						1						1										1				2										
187	46.148518	-89.131735	13	M	P		2										1													2	2										
188	46.147222	-89.131755	14	M	P		1				1																1				1										
189	46.145926	-89.131776	15	M	R						1																1														
190	46.144630	-89.131796	13	M	P		1				1						1										1				1										
191	46.143334	-89.131816	11	M	P		1				1						1										1				1										
192	46.142039	-89.131837	12	M	P		1				1																1				2										
193	46.140743	-89.131857	13	M	P		2				1						1									2					2										
194	46.139447	-89.131877	12	M	P		2				1																1				1										
195	46.138151	-89.131898	13	M	P		1																				2				1										
196	46.136855	-89.131918	12	M	P		1				1																1				2										

Point Number	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Depth (ft)	Sediment type (M=muck, S=Sand, R=Rock	Rope (R); Pole (P); Visual (V)	Notes	Ceratophyllum demersum	Chara sp.	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Heteranthera dubia	Juncus pelocarpus	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton friesii	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton strictifolius	Potamogeton zosteriformis	Ranunculus aquatilis	Sagitaria sp. (rosette)	Schoenoplectus acutus	Schoenoplectus pungens	Spirodela polyrhiza	Vallisneria americana	Zizania palustris	Myriophyllum alterniflorum	Sagittaria cuneata	Freshwater sponge	Filamentous algae
197	46.135559	-89.131939	12	M	P		1				1																1	V			1											
198	46.134263	-89.131959	11	M	P		1				1															1	1	V			1											
199	46.132967	-89.131979	9	M	P						1						1									1	1				3											
200	46.131672	-89.132000	10	M	P		2				1						1											V			1											
201	46.130376	-89.132020	10	M	P		1				1															V	1				1											
202	46.129080	-89.132040	11	M	P		1				1						1										1				1											
203	46.127784	-89.132061	10	M	P		2				1																1				1											
204	46.126488	-89.132081	13	M	P						1																2				1											
205	46.125192	-89.132101	11	M	P		1				2																1				2											
206	46.123896	-89.132122	15	M	P						1																1															
207	46.122601	-89.132142	9	M	P		1				1																1															
208	46.154983	-89.129768	2	S	P			1																										1								
209	46.153687	-89.129789	6	S	P						1							1										2														
210	46.152391	-89.129809	9	M	P		1				1						1									2		2			1											
211	46.151095	-89.129830	10	M	P		2																				2	2			1											
212	46.149800	-89.129850	10	M	P		2									1										2	1	1			2											
213	46.148504	-89.129870	13	M	P		2				1																			1	2											
214	46.147208	-89.129891	15	M	R																																					
215	46.145912	-89.129911	15	M	R																										1											
216	46.144616	-89.129932	14	M	P						1																1				2											
217	46.143320	-89.129952	12	M	P		1				1																1				1											
218	46.142024	-89.129973	12	M	P						1																1				1											
219	46.140729	-89.129993	12	M	P						1													1			1															
220	46.139433	-89.130013	12	M	P		2				1															1	1				1											
221	46.138137	-89.130034	12	M	P		1				1																1	1			1											
222	46.136841	-89.130054	12	M	P		1				1																1				1											
223	46.135545	-89.130075	12	M	P		1				1																1				1											
224	46.134249	-89.130095	11	M	P		1				1																2				1											
225	46.132953	-89.130115	11	M	P		1				1																1				1											
226	46.131657	-89.130136	11	M	P		1				1															V	1	V			1											
227	46.130362	-89.130156	10	M	P		1				1						1									2	1	V														
228	46.129066	-89.130177	10	M	P		2																			1	1				2											
229	46.127770	-89.130197	12	M	P						1																1															
230	46.126474	-89.130217	12	M	P						1						1										2															
231	46.125178	-89.130238	12	M	P						1																1															
232	46.123882	-89.130258	16	M	R		1																				1															
233	46.122586	-89.130279	17	M	R																																					
234	46.156265	-89.127883				SHALLOW																																				
235	46.154969	-89.127904	10	S	P						1															2					1											
236	46.153673	-89.127924	10	M	P																						1				1											
237	46.152377	-89.127945	12	M	P		2																							1											
238	46.151081	-89.127965	13	M	P																						1				1											
239	46.149785	-89.127985	14	M	P		2				1																1				2											
240	46.148490	-89.128006	14	M	P		2																						2	2											
241	46.147194	-89.128026	15	M	P		1				1																1															
242	46.145898	-89.128047	15	M	R						1																1															
243	46.144602	-89.128067	15	M	P		1				1																1				2											
244	46.143306	-89.128088	14	M	P		1				1																1				1											
245	46.142010	-89.128108	13	M	P		1				1															1	1				2											
246	46.140714	-89.128129	13	M	P						2																1				1											
247	46.139418	-89.128149	12	M	P		1				1																2				1											
248	46.138123	-89.128170	13	M	P		1				1																1				1											
249	46.136827	-89.128190	11	M	P		1				1																1				1											
250	46.135531	-89.128211	10	M	P		1				1																1				1											
251	46.134235	-89.128231	10	M	P		1				1						1										1				1											
252	46.132939	-89.128251	11	M	P		1				1																				3											
253	46.131643	-89.128272	14	M	P		1																				1															
254	46.130347	-89.128292	15	M	P		1				1																1															
255	46.129052	-89.128313	15	M	P		1				1																2															
256	46.127756	-89.128333	14	M	P						1																1															
257	46.126460	-89.128354	14	M	P		1				1																1				1											
258	46.125164	-89.128374	16	M	R						1																1				1											
259	46.123868	-89.128395	17	M	R																						1															
260	46.122572	-89.128415	11	S	P																																					

Point Number	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Depth (ft)	Sediment type (M=muck, S=Sand, R=Rock	Rope (R); Pole (P); Visual (V)	Notes	Ceratophyllum demersum	Chara sp.	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Heteranthera dubia	Juncus pelocarpus	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton friesii	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton strictifolius	Potamogeton zosteriformis	Ranunculus aquatilis	Sagitaria sp. (rosette)	Schoenoplectus acutus	Schoenoplectus pungens	Spirodela polyrhiza	Vallisneria americana	Zizania palustris	Myriophyllum alterniflorum	Sagittaria cuneata	Freshwater sponge	Filamentous algae
261	46.157546	-89.125998				DOCK																																				
262	46.156250	-89.126018	8	M	P						1															2		2			2					2					
263	46.154955	-89.126039	10	M	P		1									1											2				2										
264	46.153659	-89.126059	13	M	P																						1				2										
265	46.152363	-89.126080	13	M	P		1				1																1				2										
266	46.151067	-89.126100	14	M	P						1																1														
267	46.149771	-89.126121	14	M	P		2				2																				2										
268	46.148475	-89.126141	14	M	P		2				1						1										1				1										
269	46.147179	-89.126162	15	M	P																						1														
270	46.145884	-89.126183	15	M	P		1				1																1				1										
271	46.144588	-89.126203	14	M	P		2				1																1				2										
272	46.143292	-89.126224	14	M	P						1																1				1										
273	46.141996	-89.126244	13	M	P						1																1														
274	46.140700	-89.126265	11	M	P												1										1	3			1										
275	46.139404	-89.126285	12	M	P		1				1																1				1										
276	46.138108	-89.126306	12	M	P						1																1				2										
277	46.136812	-89.126326	11	M	P		1				2						1									V	2				1										
278	46.135517	-89.126347	10	M	P		1				1																1	V													
279	46.134221	-89.126367	13	M	P		1				1																1														
280	46.132925	-89.126387	14	M	P		1				1						1										1				1										
281	46.131629	-89.126408	18	M	R																										1										
282	46.130333	-89.126428	19	M	R																																				
283	46.129037	-89.126449	20	M	R																																				
284	46.127741	-89.126469	23	M	R																																				
285	46.126446	-89.126490	25	M	R																																				
286	46.125150	-89.126510	20	M	R																																				
287	46.123854	-89.126531	18	M	R																										1										
288	46.122558	-89.126551	8	S	P																																				
289	46.157532	-89.124133	7	M	P		2				1					2										2		1			2					2					
290	46.156236	-89.124154	10	M	P		2										1											2			2										
291	46.154940	-89.124174	11	M	P		2										1													1	2										
292	46.153644	-89.124195	13	M	P		2				2																2				1										
293	46.152349	-89.124215	13	M	P		1				1																2				2										
294	46.151053	-89.124236	14	M	P		2																				1				2										
295	46.149757	-89.124256	15	M	P		1				2																1														
296	46.148461	-89.124277	15	M	P		2				2																				2										
297	46.147165	-89.124298	15	M	P		2																				1				2										
298	46.145869	-89.124318	15	M	P		2				2																1				1										
299	46.144573	-89.124339	15	M	P		1				1																2														
300	46.143278	-89.124359	14	M	P		1				1																1														
301	46.141982	-89.124380	14	M	P		1				1																3				1										
302	46.140686	-89.124400	14	M	P		1				1						1										1				2										
303	46.139390	-89.124421	12	M	P																						1														
304	46.138094	-89.124441	13	M	P		1				1																1				1										
305	46.136798	-89.124462	11	M	P						1																1				2										
306	46.135502	-89.124482	13	M	P		2				1																1				2										
307	46.134206	-89.124503	15	M	P						1																2														
308	46.132911	-89.124524	16	M	R		1				1																1														
309	46.131615	-89.124544	18	M	R																						1														
310	46.130319	-89.124565	16	M	R						1																2														
311	46.129023	-89.124585	19	M	R																																				
312	46.127727	-89.124606	22	M	R																																				
313	46.126431	-89.124626	25	M	R																																				
314	46.125135	-89.124647	26	M	R																																				
315	46.123840	-89.124667	19	M	R																						1														
316	46.122544	-89.124688	5	R	P																																				
317	46.157518	-89.122268	9	M	P		2				1																1		1		2										
318	46.156222	-89.122289	10	M	P		2																				1	2	1		2										
319	46.154926	-89.122310	13	M	P		2				1																1				2										
320	46.153630	-89.122330	14	M	P		2				1																			1											
321	46.152334	-89.122351	14	M	P		2																							1	2										
322	46.151038	-89.122371	15	M	P		1				1																1														
323	46.149743	-89.122392	15	M	P		2				1																1														
324	46.148447	-89.122413	15	M	P		2																								1										
325	46.147151	-89.122433	15	M	P		1																																		

Point Number	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Depth (ft)	Sediment type (M=muck, S=Sand, R=Rock	Rope (R); Pole (P); Visual (V)	Notes	Ceratophyllum demersum	Chara sp.	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Heteranthera dubia	Juncus pelocarpus	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton friesii	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton strictifolius	Potamogeton zosteriformis	Ranunculus aquatilis	Sagitaria sp. (rosette)	Schoenoplectus acutus	Schoenoplectus pungens	Spirodela polyrhiza	Vallisneria americana	Zizania palustris	Myriophyllum alterniflorum	Sagittaria cuneata	Freshwater sponge	Filamentous algae
326	46.145855	-89.122454	15	M	P																						1															
327	46.144559	-89.122474	15	M	P		1																				2				1											
328	46.143263	-89.122495	15	M	P		1																				2															
329	46.141967	-89.122516	15	M	P		1				2																2				2											
330	46.140672	-89.122536	15	M	P		2																				2				2											
331	46.139376	-89.122557	14	M	P		2				1																2				1											
332	46.138080	-89.122577	13	M	P		2				2																2															
333	46.136784	-89.122598	13	M	P		1																				1				2											
334	46.135488	-89.122618	14	M	P						1						1										2				1											
335	46.134192	-89.122639	15	M	P																						1															
336	46.132896	-89.122660	15	M	P																																					
337	46.131600	-89.122680	15	M	P						1																2															
338	46.130305	-89.122701	15	M	P																						2															
339	46.129009	-89.122721	16	M	R		1																				1															
340	46.127713	-89.122742	20	M	R																																					
341	46.126417	-89.122762	21	M	R		1																																			
342	46.125121	-89.122783	23	M	R																																					
343	46.123825	-89.122804	17	M	R		1				2						1									1	1				2											
344	46.122529	-89.122824	5	R	P																						1															
345	46.158799	-89.120383				NONNAVIGABLE (PLANTS)																														V								
346	46.157503	-89.120404	7	M	P			1										1								2										1					
347	46.156208	-89.120424	12	M	P		1																				2															
348	46.154912	-89.120445	13	M	P		2				1																			1	2											
349	46.153616	-89.120466	16	M	P																						1															
350	46.152320	-89.120486	16	M	R																																					
351	46.151024	-89.120507	17	M	R																						1															
352	46.149728	-89.120527	17	M	R																						1															
353	46.148432	-89.120548	17	M	R																																					
354	46.147137	-89.120569	17	M	R																																					
355	46.145841	-89.120589	16	M	P		2																								2											
356	46.144545	-89.120610	15	M	P		1																				1				1											
357	46.143249	-89.120631	16	M	P		1																				1															
358	46.141953	-89.120651	15	M	P																						2				2											
359	46.140657	-89.120672	15	M	P												1										2															
360	46.139361	-89.120693	14	M	P		1				1																2															
361	46.138065	-89.120713	15	M	P																						2															
362	46.136770	-89.120734	15	M	P		1																				2															
363	46.135474	-89.120754	15	M	P												1										2															
364	46.134178	-89.120775	14	M	P		1																				2				1											
365	46.132882	-89.120796	14	M	P						1																2															
366	46.131586	-89.120816	14	M	P																						1				2											
367	46.130290	-89.120837	14	M	P		1				1																2				1											
368	46.128994	-89.120858	15	M	P						1																2															
369	46.127699	-89.120878	16		R																						1															
370	46.126403	-89.120899	15	S	P																						1															
371	46.125107	-89.120919	21	M	R																																					
372	46.123811	-89.120940	24	M	R																																					
373	46.122515	-89.120961	8	S	P																																					
374	46.158785	-89.118518	6	S	P													1							2								1									
375	46.157489	-89.118539	8	M	P																					2					2					2					
376	46.156193	-89.118560	16	M	P																						1															
377	46.154897	-89.118580	16	M	R																									1											
378	46.153601	-89.118601	17	M	R																																					
379	46.152306	-89.118622	17	M	R																										1											
380	46.151010	-89.118642	17	M	R						1																															
381	46.149714	-89.118663	17	M	R																																					
382	46.148418	-89.118684	17	M	R																						1															
383	46.147122	-89.118704	17	M	R																																					
384	46.145826	-89.118725	19	M	R																																					
385	46.144530	-89.118746	19	M	R																																					
386	46.143235	-89.118766	16	M	P		1																				2															
387	46.141939	-89.118787	16	M	P		1																				2															
388	46.140643	-89.118808	15	M	P						1																2				1											
389	46.139347	-89.118828	15	M	P		1				1																2				2											
390	46.138051	-89.118849	17	M	R																																					

Point Number	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Depth (ft)	Sediment type (M=muck, S=Sand, R=Rock	Rope (R); Pole (P); Visual (V)	Notes	Ceratophyllum demersum	Chara sp.	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Heteranthera dubia	Juncus pelocarpus	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton friesii	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton strictifolius	Potamogeton zosteriformis	Ranunculus aquatilis	Sagitaria sp. (rosette)	Schoenoplectus acutus	Schoenoplectus pungens	Spirodela polyrhiza	Vallisneria americana	Zizania palustris	Myriophyllum alterniflorum	Sagittaria cuneata	Freshwater sponge	Filamentous algae
391	46.136755	-89.118870	16	M	R																																					
392	46.135459	-89.118890	12	M	P		1																							2												
393	46.134164	-89.118911	13	M	P																					2				1											
394	46.132868	-89.118932	14	M	P		1																			3															
395	46.131572	-89.118952	13	M	P						1															1															
396	46.130276	-89.118973	14	M	P																					2															
397	46.128980	-89.118994	14	M	P																					2															
398	46.127684	-89.119014	20	M	R																																				
399	46.126388	-89.119035	13	M	P																					1															
400	46.125092	-89.119056	13	M	P						1																			1											
401	46.123797	-89.119076	40			DEEP																																			
402	46.122501	-89.119097	10	S	P																																				
403	46.158771	-89.116653	5	S	P																	1		1									1								
404	46.157475	-89.116674	16	M	R																					1															
405	46.156179	-89.116695	17	M	R																																				
406	46.154883	-89.116716	17	M	R																																				
407	46.153587	-89.116736	18	M	R																																				
408	46.152291	-89.116757	18	M	R																					1															
409	46.150995	-89.116778	18	M	R																					1															
410	46.149700	-89.116798	17	M	R																																				
411	46.148404	-89.116819	17	M	R																																				
412	46.147108	-89.116840	18	M	R																																				
413	46.145812	-89.116861	20	M	R																																				
414	46.144516	-89.116881	22	M	R																																				
415	46.143220	-89.116902	20	M	R																																				
416	46.141924	-89.116923	16	M	R																																				
417	46.140628	-89.116944	16	M	P						1						1													1	2										
418	46.139333	-89.116964	13	M	P		1				1															2				2											
419	46.138037	-89.116985	10	M	P		2				1															1				2											
420	46.136741	-89.117006	11	M	P		2				2															1				2											
421	46.135445	-89.117026	12	M	P						1																		2	2										
422	46.134149	-89.117047	10	M	P		2				2															1				2											
423	46.132853	-89.117068	11	M	P						1															1															
424	46.131557	-89.117089	12	M	P						1															2				1											
425	46.130262	-89.117109	13	M	P		1				1															3			1											
426	46.128966	-89.117130	13	M	P																					2															
427	46.127670	-89.117151	11	M	P		1				2																		1	2										
428	46.126374	-89.117171	14	M	P		1																			2				2											
429	46.125078	-89.117192	10	M	P		2				2														3	1	2			2											
430	46.123782	-89.117213	22	M	R																																				
431	46.122486	-89.117233	8	S	P																																				
432	46.160052	-89.114768	2	S	P			1	1															1		1					1									
433	46.158756	-89.114789	15	M	P																																				
434	46.157460	-89.114809	1	S	P																				1	1															
435	46.153573	-89.114872	4	S	P																																	1				
436	46.152277	-89.114892	18	M	R																																				
437	46.150981	-89.114913	18	M	R																																				
438	46.149685	-89.114934	18	M	R																																				
439	46.148389	-89.114955	18	M	R																																				
440	46.147093	-89.114975	19	M	R																																				
441	46.145797	-89.114996	19	M	R																																				
442	46.144502	-89.115017	6	S	P																			1													1				
443	46.143206	-89.115038	6	S	P													1						1						1							1		1		
444	46.141910	-89.115059	6	S	P													2										2		1							1		1		
445	46.140614	-89.115079	9	S	P													1						1													1				
446	46.139318	-89.115100	11	M	P		2																			1	2				2										
447	46.138022	-89.115121	11	M	P		2				1																				2										
448	46.136726	-89.115142	11	M	P		1				1															2				1	2										
449	46.135431	-89.115162	11	M	P		2				1						2									2					2										
450	46.134135	-89.115183	11	M	P		1																							2	2										
451	46.132839	-89.115204	11	M	P		2				1						2									1	2				2										
452	46.131543	-89.115225	11	M	P						1															2	1				2										
453	46.130247	-89.115245	13	M	P		1				2																2				1										
454	46.128951	-89.115266	11	M	P		1				2																			2	2										
455	46.127655	-89.115287	14	M	P		2																			2															

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456	46.126360	-89.115308	7	S	P																															1						
457	46.125064	-89.115328	13	M	P		1										1										1															
458	46.123768	-89.115349	36			DEEP																																				
459	46.122472	-89.115370	9	S	P																																					
460	46.161333	-89.112882	5	M	P		2				2											2				1					2										
461	46.160037	-89.112903	11	M	P						1					2	1													1	2										
462	46.158742	-89.112924	11	M	P		1				1						1													2										1	
463	46.157446	-89.112945	5	M	P						1	1				2																			2					
464	46.150966	-89.113049	4	S	P																			1											1					
465	46.149671	-89.113069	7	S	P																					2		1							1					
466	46.148375	-89.113090	6	S	P													1						1											1					
467	46.147079	-89.113111	6	S	P		1									1						1		1																
468	46.145783	-89.113132	3	S	P																			1													1		1	
469	46.144487	-89.113153	3	R	P																																1			
470	46.143191	-89.113174	4	S	P																			2																
471	46.141895	-89.113194	5	S	P																			1										1						
472	46.140600	-89.113215	6	S	P																			2											1					
473	46.139304	-89.113236	6	S	P							1												2							1				1					
474	46.138008	-89.113257	11	M	P		2									2										1					1									
475	46.136712	-89.113278	11	M	P		2				2					2										1					2									
476	46.135416	-89.113298	11	M	P		2				1																				2									
477	46.134120	-89.113319	11	M	P		2				1					2										2					2									
478	46.132824	-89.113340	10	M	P		2				1					2									2	1	1				2									
479	46.131529	-89.113361	11	M	P		2				2					2									2						2									
480	46.130233	-89.113382	11	M	P		2				2																			2	2								
481	46.128937	-89.113402	11	M	P		2				1															2														
482	46.127641	-89.113423	11	M	P		2				1															2				1	2									
483	46.126345	-89.113444	6	S	P												1							1																
484	46.125049	-89.113465	11	M	P						1															1	1				2									
485	46.123753	-89.113485	43			DEEP																																				
486	46.122458	-89.113506	10	S	P																																					
487	46.161319	-89.111017	4	M	P						2	1				1					V	V																			1
488	46.160023	-89.111038	11	M	P						2					1	1														1									
489	46.158727	-89.111059	7	M	P		2				1					1									1					1	1									1
490	46.149656	-89.111205				SHALLOW																																				
491	46.148360	-89.111226				SHALLOW																																				
492	46.147064	-89.111247				SHALLOW																																				
493	46.145769	-89.111268				SHALLOW																													V							
494	46.144473	-89.111288	2	S	P				1	1			1																						2							
495	46.143177	-89.111309	3	S	P																														2							
496	46.141881	-89.111330	4	S	P																			1													1				
497	46.140585	-89.111351	5	S	P																			1		1										1		1		1	
498	46.139289	-89.111372	5	S	P																			2																	
499	46.137993	-89.111393	6	S	P																		1	2		1										1					
500	46.136698	-89.111413	6	S	P												1							1																	
501	46.135402	-89.111434	7	S	P												1							2																	
502	46.134106	-89.111455	12	M	P		1				1															2					1									
503	46.132810	-89.111476	12	M	P						1					2														2	2									
504	46.131514	-89.111497	11	M	P		2				2																2			1	2									
505	46.130218	-89.111518	10	M	P		2				1															1		1			2									
506	46.128922	-89.111539	11	M	P		2				2															1					2									
507	46.127626	-89.111559	9	S	P						1					2	1														1									
508	46.126331	-89.111580	5	S	P																					1														
509	46.125035	-89.111601	12	M	P		1																			1					1									
510	46.123739	-89.111622	21	M	R																																					
511	46.122443	-89.111643	7	S	P																																					
512	46.161304	-89.109152	2	M	P									V	V						2									1						V					
513	46.141866	-89.109466				SHALLOW																													V							
514	46.140571	-89.109487	3	S	P																					1									2						
515	46.139275	-89.109508	4	S	P																			1																	
516	46.137979	-89.109529	5	S	P																			1																	
517	46.136683	-89.109549	5	S	P												1							1								1		1				1			
518	46.135387	-89.109570	7	S	P						1																1				1					1		2			
519	46.134091	-89.109591	12	M	P						1																				1									
520	46.132795	-89.109612	11	M	P		1				1															1					2									

Point Number	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Depth (ft)	Sediment type (M=muck, S=Sand, R=Rock	Rope (R); Pole (P); Visual (V)	Notes	Ceratophyllum demersum	Chara sp.	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Heteranthera dubia	Juncus pelocarpus	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton friesii	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton strictifolius	Potamogeton zosteriformis	Ranunculus aquatilis	Sagitaria sp. (rosette)	Schoenoplectus acutus	Schoenoplectus pungens	Spirodela polyrhiza	Vallisneria americana	Zizania palustris	Myriophyllum alterniflorum	Sagittaria cuneata	Freshwater sponge	Filamentous algae
521	46.131500	-89.109633	11	M	P						1																2			1	1											
522	46.130204	-89.109654	11	M	P		1																							2	1											
523	46.128908	-89.109675	9	M	P		2																			2					2											
524	46.127612	-89.109696	10	S	P		1				2					2	2									1	2			2											
525	46.126316	-89.109716	5	S	P												1							2		2		1			1						1				
526	46.125020	-89.109737	26	M	R																																				
527	46.123724	-89.109758	18	M	R																																				
528	46.122429	-89.109779	4	R	P																																				
529	46.139260	-89.107643				SHALLOW																												V							
530	46.137964	-89.107664	4	S	P											1						1		1						1											
531	46.136668	-89.107685	4	S	P																																1				
532	46.135373	-89.107706	5	S	P												1							1								1									
533	46.134077	-89.107727	12	M	P		2				1																1			2											
534	46.132781	-89.107748	12	M	P		1																						1												
535	46.131485	-89.107769	10	M	P		2				2																1			1											
536	46.130189	-89.107790	10	M	P		1				1																			2											
537	46.128893	-89.107811	10	M	P		2				1																1			2											
538	46.127597	-89.107832	14	M	P						1																2														
539	46.126302	-89.107853	12	M	P																						1														
540	46.125006	-89.107874	26	M	R																																				
541	46.123710	-89.107895	11	S	P																																				
542	46.137950	-89.105800				SHALLOW																												V							
543	46.136654	-89.105821	4	S	P																			1																	
544	46.135358	-89.105842	14	M	P		2				1	1															1														
545	46.134062	-89.105863	11	M	P						1																			1											
546	46.132766	-89.105884	12	M	P		1				2																2														
547	46.131470	-89.105905	11	M	P		1				2															2	1			2											
548	46.130175	-89.105926	11	M	P		2				2																2														
549	46.128879	-89.105947	10	M	P		2				1																1			2											
550	46.127583	-89.105968	13	M	P		1				1																2														
551	46.126287	-89.105989	15	M	P		1				1							1									2														
552	46.124991	-89.106010	19	M	R																																				
553	46.123695	-89.106031				TERRESTRIAL																																				
554	46.137935	-89.103936				SHALLOW																												V							
555	46.136639	-89.103957	3	S	P																													2							
556	46.135343	-89.103978	11	M	P		2				1																			2	2										
557	46.134048	-89.103999	11	M	P		1				2																1	2			2											
558	46.132752	-89.104020	11	M	P		2				1															2	1				2											
559	46.131456	-89.104041	11	M	P		2				2					2													1												
560	46.130160	-89.104062	12	M	P						2																2														
561	46.128864	-89.104083	12	M	P		2				1																1				2											
562	46.127568	-89.104104	12	M	P		2				1																				2											
563	46.126272	-89.104125	23	M	R																																				
564	46.124977	-89.104146	14	S	P																																				
565	46.143104	-89.101988	2	S	P			1									1							2																	
566	46.141808	-89.102009	3	S	P											1				V	V																					
567	46.140512	-89.102030	3	S	P			1			1						1																								
568	46.136625	-89.102093	11	M	P		1				2																		1												
569	46.135329	-89.102114	12	M	P		1				2					1											1														
570	46.134033	-89.102135	11	M	P		2				2																	1		1	2										
571	46.132737	-89.102156	11	M	P		2																								2										
572	46.131441	-89.102177	13	M	P		2				1																2				2										
573	46.130145	-89.102198	11	M	P		2				2																2				2										
574	46.128850	-89.102220	12	M	P						1																1				1										
575	46.127554	-89.102241	13	M	P		2																				2				2										
576	46.126258	-89.102262	22	M	R																																				
577	46.124962	-89.102283	15	S	P																																				
578	46.145681	-89.100081	3	S	P			1								1				V				1									1				1				
579	46.144385	-89.100102	4	S	P																							2												
580	46.143089	-89.100124	6	M	P						1						1											2												
581	46.141793	-89.100145	7	M	P		2				1						1														1										
582	46.140498	-89.100166	6	M	P		1	1			2																	2	1											1	
583	46.139202	-89.100187	7	M	P		1				2											2				2				1										
584	46.137906	-89.100208	9	M	P		2				2					1											2				2										
585	46.136610	-89.100229	13	M	P		2				2																2				2										

Point Number	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Depth (ft)	Sediment type (M=muck, S=Sand, R=Rock	Rope (R); Pole (P); Visual (V)	Notes	Ceratophyllum demersum	Chara sp.	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Heteranthera dubia	Juncus pelocarpus	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton friesii	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton strictifolius	Potamogeton zosteriformis	Ranunculus aquatilis	Sagitaria sp. (rosette)	Schoenoplectus acutus	Schoenoplectus pungens	Spirodela polyrhiza	Vallisneria americana	Zizania palustris	Myriophyllum alterniflorum	Sagittaria cuneata	Freshwater sponge	Filamentous algae
586	46.135314	-89.100250	11	M	P		2				1																2				2											
587	46.134018	-89.100271	8	S	P												1	1								1	1										1					
588	46.132722	-89.100292	6	S	P													2										1														
589	46.131427	-89.100314	4	R	P																																					
590	46.130131	-89.100335	11	M	P		1				2						2										1														
591	46.128835	-89.100356	13	M	P		2				1						2										2				1										
592	46.127539	-89.100377	13	M	P																						2				2										
593	46.126243	-89.100398	21	M	R																																					
594	46.124947	-89.100419	16	M	P		1				1																1				1										
595	46.146962	-89.098196	2	S	P																			V																	
596	46.145666	-89.098217	6	M	P						1							1																								
597	46.144370	-89.098238	7	M	P			1			1							1								2					1										
598	46.143075	-89.098259	6	M	P			1			2						2									1		2														
599	46.141779	-89.098280	7	M	P		2				2															1		2														
600	46.140483	-89.098302	8	M	P		1				2	1																			2										
601	46.139187	-89.098323	9	M	P		2				1						2										1				2										
602	46.137891	-89.098344	13	M	P		2				2						2										2				2										
603	46.136595	-89.098365	3	R	P																			2																	
604	46.135299	-89.098386	3	R	P																																					
605	46.134004	-89.098407	1	R	P																			2																	
606	46.132708	-89.098429				ROCKS																																			
607	46.130116	-89.098471	13	M	P		2				1						1														2										
608	46.128820	-89.098492	10	M	P						2						2											2			2										
609	46.127524	-89.098513	23	M	R																																					
610	46.126228	-89.098534	18	M	R																																					
611	46.124933	-89.098555	4	R	P																																					
612	46.146947	-89.096331	3	S	P												1			2				V											1						
613	46.145652	-89.096353	6	M	P			2			1							1																							
614	46.144356	-89.096374	6	M	P			1			1							1													1										
615	46.143060	-89.096395	7	M	P		2				1																	2	2		2										
616	46.141764	-89.096416	8	M	P		2				1															1		1	2		2									1	
617	46.140468	-89.096437	9	M	P		1				2						1	1								1		2		2	2						1				
618	46.139172	-89.096459	10	M	P		2				1															2	1				2										
619	46.137876	-89.096480	11	M	P		1				1																			2	2										
620	46.133989	-89.096543	8	M	P		2				2						2									1		2			1										
621	46.132693	-89.096565	10	M	P		2				2						2												1		2										
622	46.131397	-89.096586	11	M	P		2				1																2				2										
623	46.130101	-89.096607	11	M	P		2				1						2										1				2										
624	46.128805	-89.096628	13	M	P		2				1																2				2										
625	46.127510	-89.096649	24	M	R																																					
626	46.126214	-89.096671	4	S	P																																					
627	46.146933	-89.094467	4	S	P			1	1																			2						2						
628	46.145637	-89.094488	7	M	P			1			1						1	1																							
629	46.144341	-89.094510	7	M	P		1																						2		2									1	
630	46.143045	-89.094531	8	M	P		1				1						1												2												
631	46.141749	-89.094552	9	M	P		1															2							2		2									1	
632	46.140453	-89.094573	10	M	P		1				1						2					2				1	1		2		1										
633	46.139158	-89.094595	9	M	P		2				1																1		2		2										
634	46.137862	-89.094616	7	M	P		1				2					1						1					2				1										
635	46.135270	-89.094658	4	R	P																			2							1										
636	46.133974	-89.094679	10	M	P		2				1						2										1	2			2										
637	46.132678	-89.094701	10	M	P		1				1						2										1	1			2										
638	46.131382	-89.094722	14	M	P						2																															
639	46.130087	-89.094743	13	M	P		1				1																1				2										
640	46.128791	-89.094764	15	M	P		2																			1	1				2										
641	46.127495	-89.094786	24	M	R																																					
642	46.126199	-89.094807	3	S	P																																					
643	46.146918	-89.092603	8	M	P																							1	2										1			
644	46.145622	-89.092624	8	M	P																								2												
645	46.144326	-89.092645	7	M	P		2				1						2												2												
646	46.143030	-89.092667	8	M	P		1				1						2											2	2												
647	46.141735	-89.092688	8	M	P		2				1											2				2			3		1									1	
648	46.140439	-89.092709	9	M	P		2				1											2									2										
649	46.139143	-89.092730	9	M	P		2				2															2	1				2										
650	46.137847	-89.092752	10	M	P						1																1		1	2	2										

Point Number	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Depth (ft)	Sediment type (M=muck, S=Sand, R=Rock	Rope (R); Pole (P); Visual (V)	Notes	Ceratophyllum demersum	Chara sp.	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Heteranthera dubia	Juncus pelocarpus	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton friesii	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton strictifolius	Potamogeton zosteriformis	Ranunculus aquatilis	Sagitaria sp. (rosette)	Schoenoplectus acutus	Schoenoplectus pungens	Spirodela polyrhiza	Vallisneria americana	Zizania palustris	Myriophyllum alterniflorum	Sagittaria cuneata	Freshwater sponge	Filamentous algae
651	46.136551	-89.092773	10	M	P		2				2						1										1				2											
652	46.135255	-89.092794	10	M	P		2				1																			1	1										
653	46.133959	-89.092816	12	M	P						1																			1	1										
654	46.132664	-89.092837	13	M	P		2				2																			2	1										
655	46.131368	-89.092858	15	M	P		1				1																			1											
656	46.130072	-89.092879	15	M	P		1																				1				2										
657	46.128776	-89.092901	14	M	P		1																				2														
658	46.127480	-89.092922	18	M	R																																				
659	46.126184	-89.092943	5	S	P													1								1															
660	46.148199	-89.090717	5	S	P			1	2		1							1						1								1	V							
661	46.146903	-89.090738	8	M	P						1																		2	1	1									
662	46.145607	-89.090760	8	M	P						2																		1		2									
663	46.144311	-89.090781	8	M	P		2				1										2								2		2									
664	46.143016	-89.090802	8	M	P		1				2						2				2				1						2									
665	46.141720	-89.090824	7	M	P						1																	2	3											
666	46.140424	-89.090845	4	S	P			1			1							1						2							1									
667	46.137832	-89.090888	9	M	P		2				1						2														2							1			
668	46.136536	-89.090909	10	M	P		2				2															2	1	1	1		1										
669	46.135240	-89.090930	12	M	P						1																			1	2										
670	46.133945	-89.090952	14	M	P		1				1																			1	1										
671	46.132649	-89.090973	16	M	R		1				1																			1											
672	46.131353	-89.090994	16	M	P						1																														
673	46.130057	-89.091016	15	M	P		1				1																			2	2										
674	46.128761	-89.091037	13	M	P		1				1																			2											
675	46.127465	-89.091058	14	M	P		2				1																			2											
676	46.126169	-89.091079	11	M	P		2				2																1				2										
677	46.124874	-89.091101	2	S	P													1																							
678	46.148184	-89.088852	8	M	P						1															1		1	2								2				
679	46.146888	-89.088874	8	M	P		1				1																		2								1			
680	46.145592	-89.088895	8	M	P		1				2						1				1								2		2						2			
681	46.144297	-89.088917	8	M	P						1																		2		1									
682	46.143001	-89.088938	7	M	P		1				1					2													2		1									
683	46.140409	-89.088981	7	M	P		1				1										2								1											
684	46.139113	-89.089002	6	R	P																									1							1				
685	46.137817	-89.089023	11	M	P		2				2																	1	1		2									
686	46.136521	-89.089045	11	M	P		2				2						2												1											
687	46.135226	-89.089066	15	M	P						1																			1											
688	46.133930	-89.089088	16	M	P																								1	2										
689	46.132634	-89.089109	16	M	R																									1										
690	46.131338	-89.089130	16	M	P		1				1																			2										
691	46.130042	-89.089152	15	M	P		2				1																			1	2										
692	46.128746	-89.089173	13	M	P						1																1														
693	46.127450	-89.089194	14	M	P		1				1										1									2											
694	46.126155	-89.089216	12	M	P		2				2																1				2										
695	46.124859	-89.089237	8	S	P						1						1	2										2			2										
696	46.149465	-89.086967	4	S	P													1						1																1	
697	46.148169	-89.086988	7	M	P																								2										1	
698	46.146873	-89.087009	8	M	P						1						1									1			2		2									
699	46.145578	-89.087031	8	M	P		2				1																	2	2											
700	46.144282	-89.087052	8	M	P		1				2																		2		2									
701	46.142986	-89.087074	4	R	P						1							1																							
702	46.140394	-89.087117	6	M	P		2				1										1							2			2									
703	46.139098	-89.087138	10	M	P		2				2				1	1	2	1													1									
704	46.137802	-89.087159	10	M	P		2				1															2			1	2	2									
705	46.136507	-89.087181	12	M	P						1							1													1										
706	46.135211	-89.087202	13	M	P						1																2														
707	46.133915	-89.087224	15	M	P		2				1																2														
708	46.132619	-89.087245	16	M	P						1																2														
709	46.131323	-89.087266	14	M	P		2				1																			1	2										
710	46.130027	-89.087288	13	M	P		3				2																1				2										
711	46.128731	-89.087309	12	M	P		2				1																	2			1										
712	46.127436	-89.087331	12	M	P		2				1															2	2				2										
713	46.126140	-89.087352	11	M	P						2																1	2			1										
714	46.124844	-89.087373	7	S	P		1	1			1	1						2																							2
715	46.149450	-89.085102	7	M	P						1						1																								

Point Number	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Depth (ft)	Sediment type (M=muck, S=Sand, R=Rock	Rope (R); Pole (P); Visual (V)	Notes	Ceratophyllum demersum	Chara sp.	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Heteranthera dubia	Juncus pelocarpus	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton friesii	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton strictifolius	Potamogeton zosteriformis	Ranunculus aquatilis	Sagitaria sp. (rosette)	Schoenoplectus acutus	Schoenoplectus pungens	Spirodela polyrhiza	Vallisneria americana	Zizania palustris	Myriophyllum alterniflorum	Sagittaria cuneata	Freshwater sponge	Filamentous algae
716	46.148154	-89.085124	8	M	P		1				1																	1	2		2										1	
717	46.146858	-89.085145	8	M	P						1																		2												1	
718	46.145563	-89.085167	9	M	P		2				1						2												2												1	1
719	46.144267	-89.085188	8	M	P						2											2							1												
720	46.139083	-89.085274	7	M	P		2				1															2		2	1		2						2				
721	46.137788	-89.085295	10	M	P		1										2												2		2										
722	46.136492	-89.085317	11	M	P		2				1						2										1				1										
723	46.135196	-89.085338	13	M	P		1				2																2	2			2										
724	46.133900	-89.085360	14	M	P						2																2				1										
725	46.132604	-89.085381	13	M	P						1																1														1
726	46.131308	-89.085403	13	M	P		1				1																2														
727	46.130012	-89.085424	12	M	P		2				1						2												1	2	2										
728	46.128717	-89.085445	12	M	P		2				2																1			2	1										
729	46.127421	-89.085467	11	M	P		1				1				1			2									1	2			2										
730	46.126125	-89.085488	10	M	P		1				1					1	2											1	2		1										
731	46.124829	-89.085510	7	S	P			1										1																		1				1	
732	46.150731	-89.083216	2	M	P		1									1	2												1		1		2			1				
733	46.149435	-89.083238	7	M	P		1	1			2	1				2												V	2											
734	46.148139	-89.083259	8	M	P		1				2							1													2										
735	46.146844	-89.083281	8	M	P						1							1											2												
736	46.145548	-89.083302	8	M	P		1				1														1				2		1										
737	46.144252	-89.083324	8	M	P		2				2											2							1	1	2										1	
738	46.142956	-89.083345	6	S	P			1			1	1						1																		1					
739	46.141660	-89.083367	11	M	P						1							1									1									2					
740	46.140364	-89.083388	27	M	R																																				
741	46.139068	-89.083410	16	M	P																																				
742	46.137773	-89.083431	12	M	P		2				2							1										2		1	1										
743	46.136477	-89.083453	9	M	P		2				2																	1		1	2										
744	46.135181	-89.083474	11	M	P		2				1																1	1													
745	46.133885	-89.083496	12	M	P						1																2														
746	46.132589	-89.083517	10	M	P		2																				1	2			1										
747	46.131293	-89.083539	11	M	P		2				1																				1										
748	46.129997	-89.083560	9	M	P						2						1										1	1													
749	46.128702	-89.083582	11	M	P		1				1																	2		1	2										
750	46.127406	-89.083603	10	M	P		2				1																2	1													
751	46.126110	-89.083625	10	M	P		1										3										1				1										
752	46.124814	-89.083646	9	M	P		1										2												2		1										
753	46.149420	-89.081373	7	M	P																							V	3		V										
754	46.148124	-89.081395	7	M	P						1	1					V											V	1		1						1				
755	46.146829	-89.081416	7	M	P																	1							1		V										
756	46.145533	-89.081438	8	M	P																				1				1								1				
757	46.144237	-89.081459	7	M	P		1										1					V			V		1	1			V										
758	46.142941	-89.081481	16	M	R																																				
759	46.141645	-89.081503	10	M	P						1																														
760	46.140349	-89.081524	8	M	P		1				1					1	1												1		1										
761	46.139053	-89.081546	9	M	P		1				1						2											V			1										
762	46.137758	-89.081567	10	M	P		1				1	1					2						1						1		1										
763	46.136462	-89.081589	9	M	P		1				1											V	1					V			1										
764	46.135166	-89.081610	11	M	P						1												3					V			V										
765	46.133870	-89.081632	11	M	P		1				1						1	1										V			1										
766	46.132574	-89.081653	16	M	P																																				
767	46.131278	-89.081675	12	R	P																																				
768	46.129983	-89.081696	6	R	P																																				
769	46.128687	-89.081718	9	M	P						3																				1										
770	46.127391	-89.081739	8	M	P		1				1						1												3		1										
771	46.126095	-89.081761	7	M	P						1					1	2	1					1				1				V					2					
772	46.124799	-89.081783	12	M	P		1				1						1						1								1										
773	46.149405	-89.079509	6	M	P						1	1						1									1		1		1										
774	46.148109	-89.079530	7	M	P		1				1	1					1											1			1										
775	46.146814	-89.079552	7	M	P																	V							3		V						1				
776	46.145518	-89.079574	7	M	P		1															1							3		1										
777	46.144222	-89.079595	7	M	P		1				1					1												V	1		1										
778	46.142926	-89.079617	21	M	R																																				
779	46.139038	-89.079681	7	M	P						1						1					1							1								2				
780	46.137743	-89.079703	8	M	P						1	1													1												1			1	

Point Number	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Depth (ft)	Sediment type (M=muck, S=Sand, R=Rock	Rope (R); Pole (P); Visual (V)	Notes	Ceratophyllum demersum	Chara sp.	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Heteranthera dubia	Juncus pelocarpus	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton friesii	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton strictifolius	Potamogeton zosteriformis	Ranunculus aquatilis	Sagitaria sp. (rosette)	Schoenoplectus acutus	Schoenoplectus pungens	Spirodela polyrhiza	Vallisneria americana	Zizania palustris	Myriophyllum alterniflorum	Sagittaria cuneata	Freshwater sponge	Filamentous algae
781	46.136447	-89.079725	9	M	P						2						2	2								1			1		1											
782	46.135151	-89.079746	10	M	P		1				1						V	1																							
783	46.133855	-89.079768	13	S	P																																				
784	46.127376	-89.079876	3	R	P																																				
785	46.126080	-89.079897	8	M	P		1				2																	V	1		V										
786	46.124784	-89.079919	8	M	P						2						V											1	1		1										
787	46.123488	-89.079940	9	M	P		1				1												1								1										
788	46.149390	-89.077644	7	M	P		1				1	1					1	1																			1				
789	46.148094	-89.077666	6	M	P			1			1	1					1												1		V						1				
790	46.146799	-89.077688	6	M	P												1									2			2		V										
791	46.145503	-89.077709	6	M	P		1				1						V					V					1	1	1		V						1				
792	46.144207	-89.077731	6	M	P												1					1							2												
793	46.142911	-89.077752	7	M	P			1			1	1					1														1						1				
794	46.141615	-89.077774	14	S	P		1											1								1					1										
795	46.137728	-89.077839	7	M	P						1						1													1											1
796	46.136432	-89.077861	8	M	P						1						3									1					1										
797	46.135136	-89.077882	14	M	P																																				
798	46.127361	-89.078012	4	M	P						1						1				1								2												
799	46.126065	-89.078034	8	M	P						1						1					1						V	3												
800	46.124769	-89.078055	7	M	P						1											V							3												
801	46.123473	-89.078077	6	M	P						1											1	1	1				1	2												
802	46.150671	-89.075758	3	M	P		1				1							1			1						1									V		3				
803	46.149375	-89.075780	6	M	P			1									1												1												
804	46.148079	-89.075801	6	M	P																								1		1										
805	46.146784	-89.075823	5	M	P			1			1	1				1	1												1												
806	46.145488	-89.075845	5	M	P			1			1	1					2												1		2										
807	46.144192	-89.075867	5	M	P			1				1					1											1	1								1				
808	46.142896	-89.075888	6	M	P			1			1	1				1													1								1				
809	46.141600	-89.075910	15	M	P						1																														
810	46.140304	-89.075932	6	M	P												1					1						1	3		2										
811	46.137713	-89.075975	7	M	P						2	1										1																			
812	46.136417	-89.075997	7	M	P		1				3						1										2	1													
813	46.127346	-89.076148	2	M	P			1			1	1			1		1	2			V						1	V			1						1				2
814	46.126050	-89.076170	6	M	P						1				1		1					1						V	3		V						1				
815	46.124754	-89.076192	6	M	P						1							1										1	2												
816	46.123458	-89.076213	5	M	P						1						V											V			1										
817	46.150656	-89.073894				NONNAVIGABLE (PLANTS)																																V					
818	46.149360	-89.073915	5	M	P			1																					1		V								1		
819	46.148064	-89.073937	5	M	P			1									1												1		1										
820	46.146768	-89.073959	5	M	P			1			1	1																V			V										
821	46.145473	-89.073980	5	M	P			1			1	1				1	1									1															
822	46.144177	-89.074002	5	M	P			1			2	1					2													1											
823	46.142881	-89.074024	22	M	R																																				
824	46.141585	-89.074046	7	M	P		2				2	1																		1											
825	46.140289	-89.074067	5	M	P						1	1				1		1				V							1												
826	46.137697	-89.074111	5	M	P						1																														1
827	46.136402	-89.074133	8	M	P		1				3						1	1									1				1										
828	46.126035	-89.074306	5	M	P		1				1						1				V							V	2		1										
829	46.124739	-89.074328	4	M	P		1				1	1					V				1							V	2		V										
830	46.123443	-89.074350	4	M	P						1	V					1											V													1
831	46.150641	-89.072029				NONNAVIGABLE (PLANTS)																																V					
832	46.149345	-89.072051	5	M	P																								2		1										
833	46.148049	-89.072073	6	M	P			1				1						1																								
834	46.146753	-89.072094	5	M	P			1			1	1				1															1										
835	46.145457	-89.072116	5	M	P																										V						1				
836	46.144162	-89.072138	6	M	P			1			1	1						1											1												
837	46.142866	-89.072160	7	M	P		2				3	1				2	2	1												1								1				
838	46.126020	-89.072443	2	M	P						1						V	V			V							V		1	1										
839	46.124724	-89.072464	3	M	P		1				1										1						1														
840	46.150626	-89.070165	4	M	P		1	1			1	1						1											1		1			1			1	2				
841	46.149330	-89.070186	6	M	P			1			1	1					1										1											1				
842	46.148034	-89.070208	6	M	P													1										V			1							V				
843	46.146738	-89.070230	5	M	P																							V													
844	46.145442	-89.070252	6	M	P			1				1					1																								
845	46.144146	-89.070274	5	M	P			1			2	1				1	1											1									2				

Point Number	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Depth (ft)	Sediment type (M=muck, S=Sand, R=Rock	Rope (R); Pole (P); Visual (V)	Notes	Ceratophyllum demersum	Chara sp.	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Heteranthera dubia	Juncus pelocarpus	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton friesii	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton strictifolius	Potamogeton zosteriformis	Ranunculus aquatilis	Sagitaria sp. (rosette)	Schoenoplectus acutus	Schoenoplectus pungens	Spirodela polyrhiza	Vallisneria americana	Zizania palustris	Myriophyllum alterniflorum	Sagittaria cuneata	Freshwater sponge	Filamentous algae
846	46.149315	-89.068322				NONNAVIGABLE (PLANTS)																															V				
847	46.148019	-89.068344	5	M	P			1										1																			V				
848	46.146723	-89.068366	7	M	P																																					
849	46.145427	-89.068387	6	M	P			1			1	1					V	1																								
850	46.144131	-89.068409	8	M	P			1			1							1									1				1											
851	46.149299	-89.066457				NONNAVIGABLE (PLANTS)																															V				
852	46.148004	-89.066479				NONNAVIGABLE (PLANTS)																															V				
853	46.146708	-89.066501				NONNAVIGABLE (PLANTS)																															V				
854	46.145412	-89.066523	5	M	P			1				1						1											1		1							1				
855	46.144116	-89.066545	4	M	P							1				V	V	1													1							1				
856	46.147988	-89.064615				NONNAVIGABLE (PLANTS)																															V				
857	46.146693	-89.064637				NONNAVIGABLE (PLANTS)																															V				
858	46.145397	-89.064659				NONNAVIGABLE (PLANTS)																															V				
859	46.144101	-89.064681				NONNAVIGABLE (PLANTS)																															V				
860	46.145381	-89.062794				NONNAVIGABLE (PLANTS)																															V				

F

APPENDIX F

WDNR Fish Stocking Records for Lac Vieux Desert

Lac Vieux Desert WDNR Fish Stocking

Year	Species	Age Class	# Fish Stocked	Avg Fish Length (in)
1974	Muskellunge	Fingerling	2,778	9
1976	Muskellunge	Fingerling	1,121	7
1977	Muskellunge	Fingerling	9,241	5
1979	Muskellunge	Fingerling	2,500	9
1982	Muskellunge	Fingerling	2,499	11
1983	Muskellunge	Fingerling	600	8
1984	Muskellunge	Fingerling	1,000	11
1985	Muskellunge	Fingerling	2,500	9
1986	Muskellunge	Fingerling	2,504	12
1987	Muskellunge	Fingerling	7,500	11.67
1988	Muskellunge	Fingerling	2,530	10.8
1989	Muskellunge	Fingerling	2,000	11
1991	Muskellunge	Fingerling	2,000	12
1992	Muskellunge	Fingerling	2,500	11
1992	Muskellunge	Fry	17,500	1
1993	Muskellunge	Fingerling	4,101	10.53
1993	Muskellunge	Fry	10,800	0.4
1995	Muskellunge	Fry	25,000	0.4
1998	Muskellunge	Large Fingerling	2,500	12.3
2000	Muskellunge	Large Fingerling	2,500	11.1
2001	Muskellunge	Large Fingerling	2,150	10.2
2003	Muskellunge	Large Fingerling	2,150	10.4
2005	Muskellunge	Large Fingerling	2,150	11.3
2007	Muskellunge	Large Fingerling	1,375	13.1

Lac Vieux Desert WDNR Fish Stocking

Year	Species	Age Class	# Fish Stocked	Avg Fish Length (in)
1973	Walleye	Fry	5,300,000	
1974	Walleye	Fry	6,165,000	
1975	Walleye	Fry	7,984,000	
1976	Walleye	Fingerling	36,000	3
1976	Walleye	Fry	6,224,000	
1977	Walleye	Fry	9,852,000	
1978	Walleye	Fry	3,128,000	
1979	Walleye	Fry	5,519,360	
1980	Walleye	Fry	7,500,000	
1981	Walleye	Fingerling	50,625	3
1981	Walleye	Fry	9,800,000	
1982	Walleye	Fingerling	20,000	3
1982	Walleye	Fry	5,100,000	
1983	Walleye	Fingerling	25,000	2.5
1983	Walleye	Fry	3,488,000	1
1984	Walleye	Fingerling	25,000	2
1984	Walleye	Fry	3,690,000	1
1985	Walleye	Fingerling	22,000	2
1985	Walleye	Fry	13,718,000	1
1986	Walleye	Fingerling	25,000	2
1986	Walleye	Fry	8,664,000	1
1987	Walleye	Fingerling	75,000	3
1987	Walleye	Fry	14,100,000	2.5
1988	Walleye	Fingerling	25,000	2
1988	Walleye	Fry	11,000,000	4
1989	Walleye	Fingerling	25,200	1
1989	Walleye	Fry	4,000,000	3
1990	Walleye	Fingerling	25,200	3
1990	Walleye	Fry	2,600,000	1
1991	Walleye	Fingerling	25,137	3
1991	Walleye	Fry	9,200,000	0
1992	Walleye	Fry	3,575,000	0
1993	Walleye	Fingerling	25,012	2
1993	Walleye	Fry	2,000,000	0.2
1994	Walleye	Fingerling	25,928	2
1994	Walleye	Fry	3,300,000	0.2
1995	Walleye	Fingerling	25,100	1.9
1995	Walleye	Fry	1,000,000	0.2
1996	Walleye	Fingerling	25,134	1.8
1996	Walleye	Fry	1,000,000	0.3
1997	Walleye	Fry	1,500,000	0.3
1998	Walleye	Fry	1,100,000	0.3
1998	Walleye	Small Fingerling	25,000	1.5
1999	Walleye	Fry	2,500,000	0.3
1999	Walleye	Small Fingerling	25,043	1.7
2000	Walleye	Fry	6,000,000	0.3
2001	Walleye	Fry	1,300,000	0.3