A

APPENDIX A

Public Participation Materials

Presentation Outline

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

Onterra, LLC

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

A goal without a plan is just a wish!

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
  - Shoreland Assessment
  - Fisheries Data Integration
  - Stakeholder Survey

Water Quality Analysis

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

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Watershed Assessment

(Phases IV & V)

- Delineation of drainage basins
- Modeling
  - Lakes are modeled in series
  - Land cover
  - Phosphorus loading
  - Scenario development

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Aquatic Plant Surveys

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

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Non-native Aquatic Plants

Curly-leaf Pondweed

Onterra LLC

Non-native Aquatic Plants

Eurasian Water Milfoil

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Waterbody	Point-Intercept Resolution (m)	Total Points
Rice Creek ✓ (WDNR)	-	-
Island Lake ✓ (WDNR)	73	655
Spider Lake ✓	35	913
Clear Lake	62	543
Fawn Lake	37	207
Wild Rice Lake	61	418
Alder Lake	55	354
Manitowish Lake	39	1315
Little Star Lake	36	808
Stone Lake	40	345
Rest Lake/Papoose Creek ✓	55/25	964
Vance Lake	30	124
Sturgeon Lake	30	172
Benson Lake	30	123

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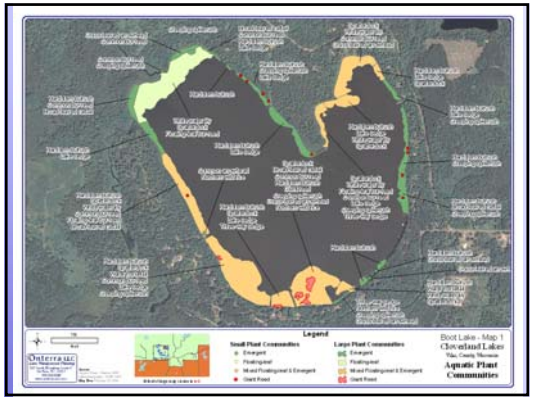

Shoreland Assessment

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

Urbanized → Range → **Natural**

Onterra LLC Lake Management Planning

Fisheries Data Integration

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

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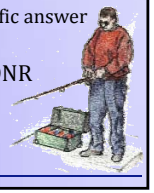
Stakeholder Survey

(Phase III – 2014)

- 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



Onterra LLC Lake Management Planning

Planning Process

Planning Committee Meetings

Study Results

Conclusions & Initial Recommendations

Onterra LLC Lake Management Planning

Manitowish Planning Process

- Chain-wide project brings on unique situation
  - Cost savings are great
  - Providing attention to individual lakes is difficult
- Lake representatives (captains)
  - Communication link between stakeholders from individual lakes and Planning Committee
- Stakeholder survey comments will be important

Onterra LLC Lake Management Planning

Planning Process

Planning Committee Meetings

Study Results
Conclusions & Initial Recommendations
Management Goals
Management Actions
Timeframe
Facilitator(s)

↓

Implementation Plan

Onterra LLC Lake Management Planning

Manitowish Chain Management Plan Documents

- Multiple document types
  - Manitowish Chain Management Plan
  - Lake-Specific Results and Conclusions
  - Lake-Specific Implementation Plan
  - Appendices (raw data, etc.)
- Chain-wide Compilation
  - All documents
- Individual Lake Document
  - Chain-wide management plan
  - Lake-specific documents

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Thank You

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

Wisconsin Lakes Partnership

UW Extension

Wisconsin Dept. of Natural Resources

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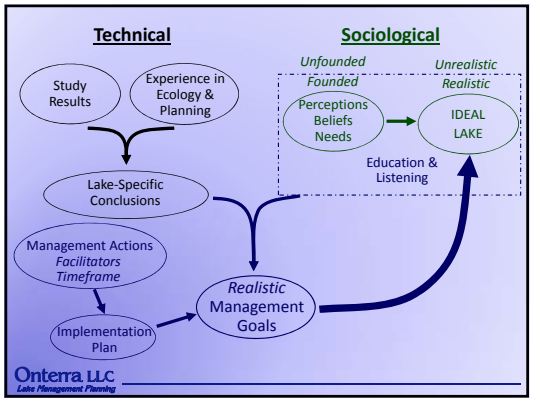
The Planning Process

…it's not as easy as you may think.



Current Funding Overview

- Lake Management Planning Grant
  - Received Aug 2011
- AIS Education, Prevention and Planning Grants
  - Received Feb 2012, Aug 2012 and Feb 2013
- AIS Early Detection and Response Grants
  - Received Feb 2012 & 2013

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Project Components

Scientific Studies

- Aquatic Plant Surveys
  - Native
  - Non-Native
- Water Quality Monitoring
- Watershed Delineation/Modeling
- Fishery Data Compilation and Integration
- Shoreland Development Surveys

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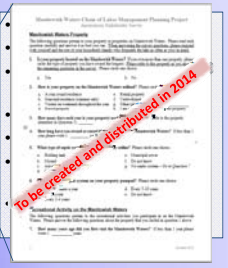
Lake Management Planning

Project Components

Public Participation & Engagement

- Public meetings
- Anonymous stakeholder survey
- Volunteer Activities
- Educational Campaign



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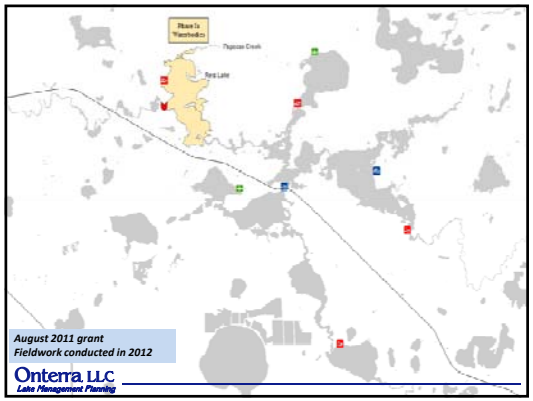
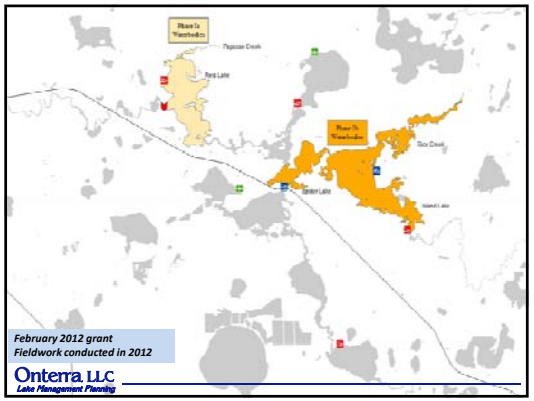
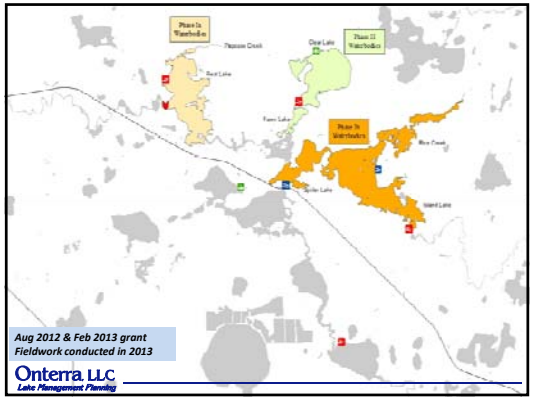
Lake Management Planning

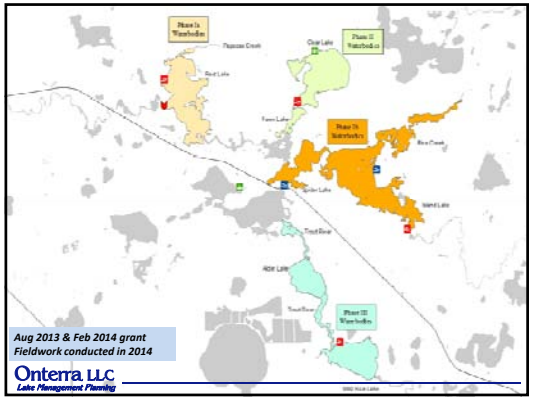


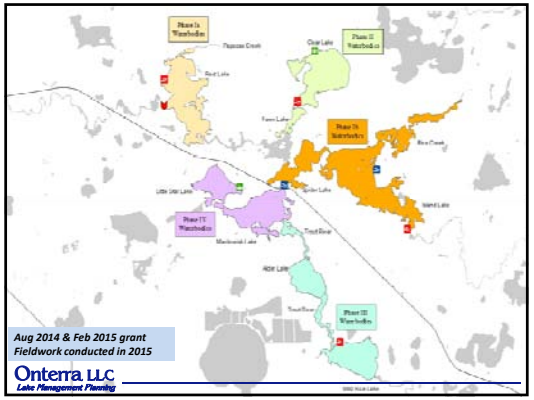
Onterra LLC
Lake Management Planning

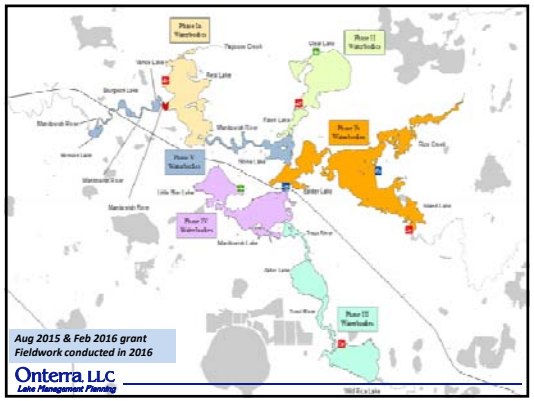


Onterra LLC
Lake Management Planning









Next Steps in Planning Process

- August 1 AIS-EPP grant submittal
- AIS-EDR grant to fund further CLP treatments
- Proceed with 2013 summer surveys
  - Water quality monitoring
  - Aquatic plant studies
  - Shoreland development surveys
- Phase I & II Planning Process

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Curly-leaf Pondweed Monitoring

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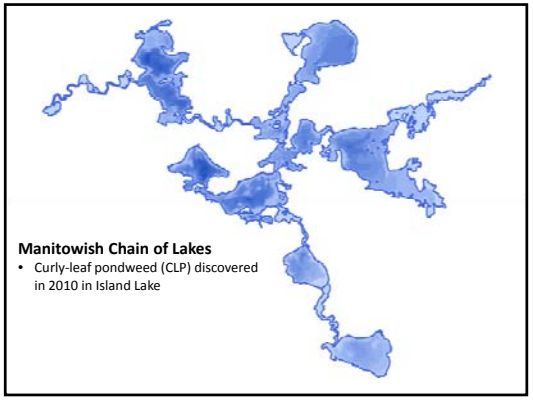
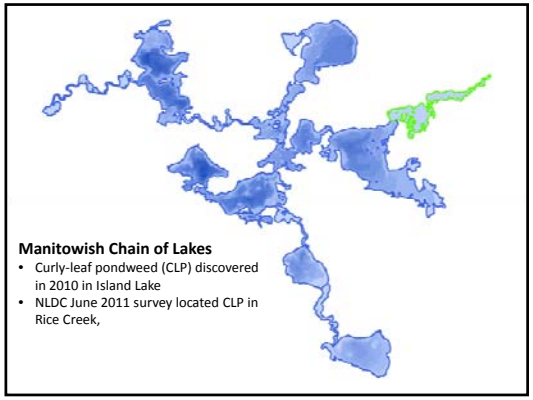

Manitowish Chain of Lakes
• Curly-leaf pondweed (CLP) discovered in 2010 in Island Lake


Manitowish Chain of Lakes
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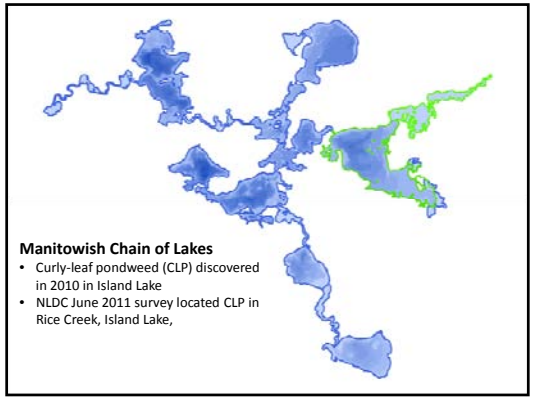
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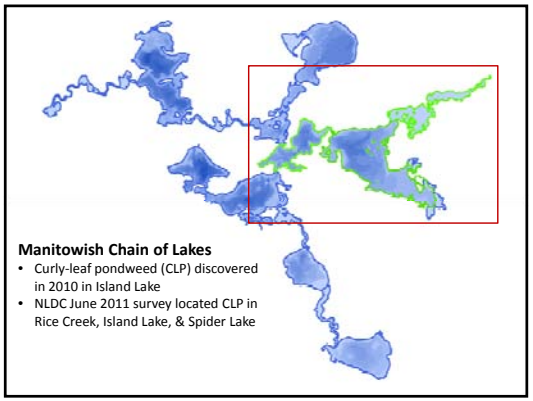
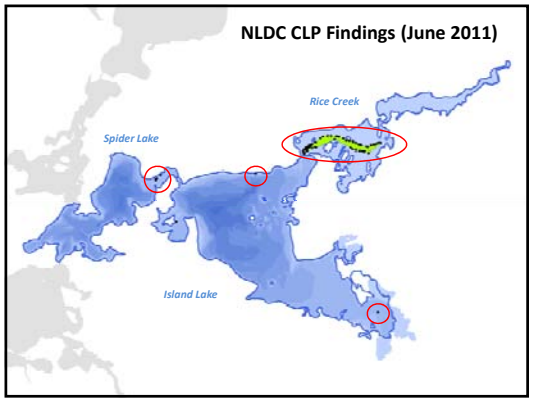
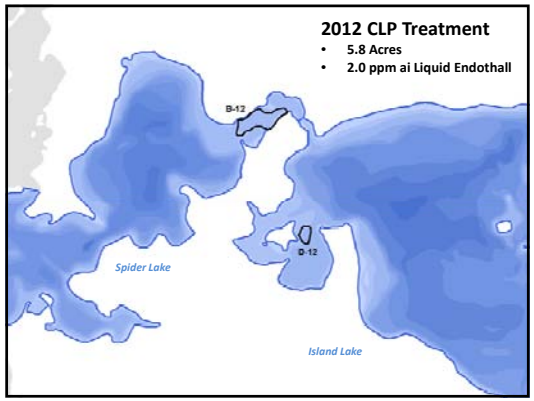
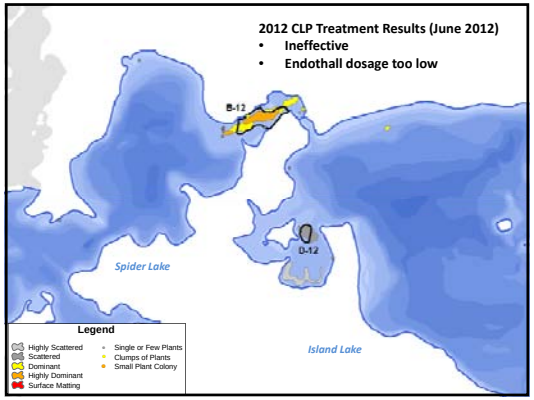
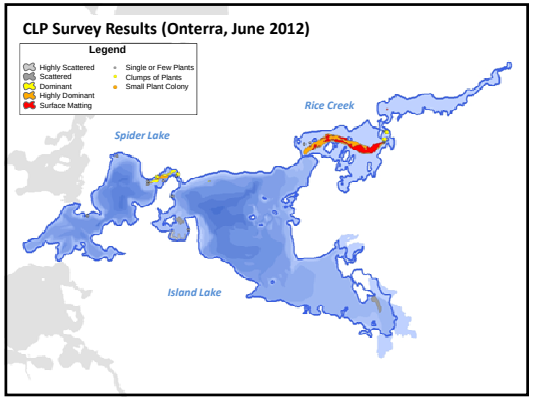
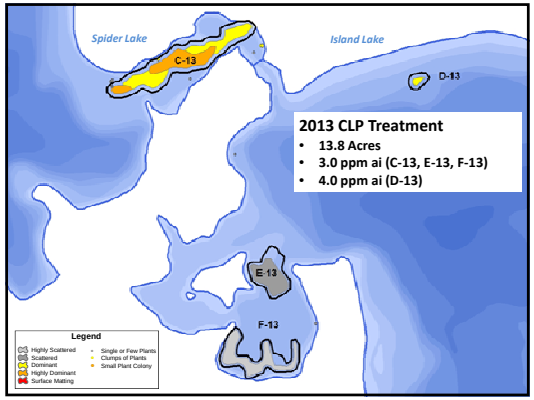

Manitowish Chain of Lakes
• Curly-leaf pondweed (CLP) discovered in 2010 in Island Lake
• NLDC June 2011 survey located CLP in Rice Creek, Island Lake, & Spider Lake

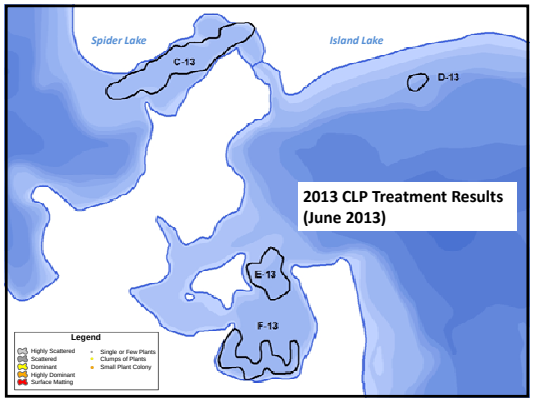

NLDC CLP Findings (June 2011)
Rice Creek
Spider Lake
Island Lake


2012 CLP Treatment
• 5.8 Acres
• 2.0 ppm ai Liquid Endothall
B-12
B-12
Spider Lake
Island Lake


2012 CLP Treatment Results (June 2012)
• Ineffective
• Endothall dosage too low
B-12
D-12
Spider Lake
Island Lake
Legend
Highly Scattered
Scattered
Dominant
Highly Dominant
Surface Matting
Single or Few Plants
Clumps of Plants
Small Plant Colony


CLP Survey Results (Onterra, June 2012)
Legend
Highly Scattered
Scattered
Dominant
Highly Dominant
Surface Matting
Single or Few Plants
Clumps of Plants
Small Plant Colony
Rice Creek
Spider Lake
Island Lake


Spider Lake
Island Lake
C-13
D-13
2013 CLP Treatment
• 13.8 Acres
• 3.0 ppm ai (C-13, E-13, F-13)
• 4.0 ppm ai (D-13)
E-13
F-13
Legend
Highly Scattered
Scattered
Dominant
Highly Dominant
Surface Matting
Single or Few Plants
Clumps of Plants
Small Plant Colony


Spider Lake
Island Lake
C-13
D-13
2013 CLP Treatment Results
(June 2013)
E-13
F-13
Legend
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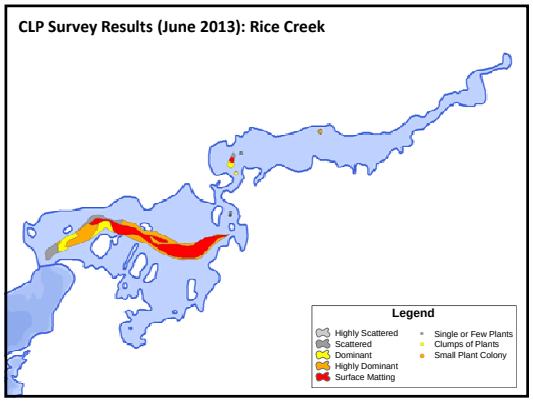
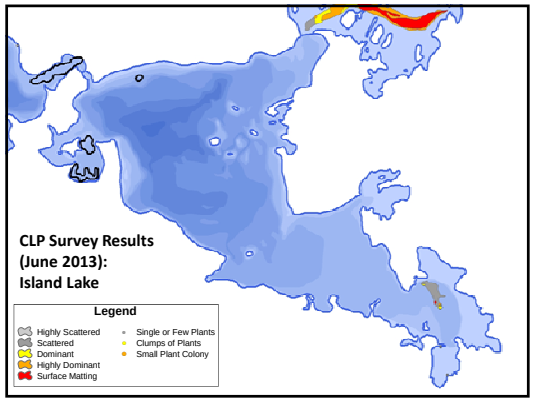
Scattered
Dominant
Highly Dominant
Surface Matting
Single or Few Plants
Clumps of Plants
Small Plant Colony


CLP Survey Results (June 2013): Rice Creek
Legend
Highly Scattered
Scattered
Dominant
Highly Dominant
Surface Matting
Single or Few Plants
Clumps of Plants
Small Plant Colony


CLP Survey Results
(June 2013):
Island Lake
Legend
Highly Scattered
Scattered
Dominant
Highly Dominant
Surface Matting
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Clumps of Plants
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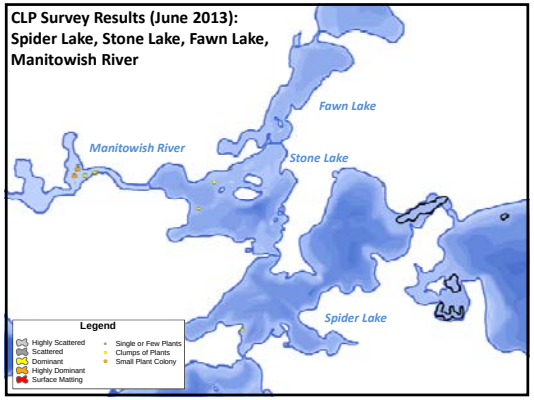
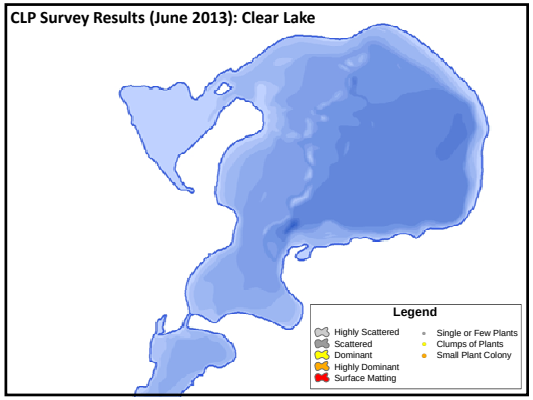
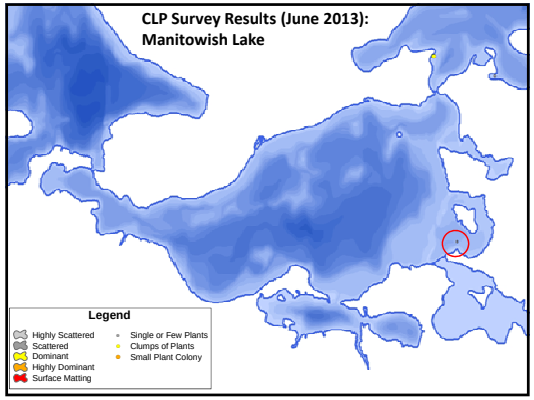

CLP Survey Results (June 2013):
Spider Lake, Stone Lake, Fawn Lake,
Manitowish River
Fawn Lake
Manitowish River
Stone Lake
Spider Lake
Legend
Highly Scattered
Scattered
Dominant
Highly Dominant
Surface Matting
Single or Few Plants
Clumps of Plants
Small Plant Colony


CLP Survey Results (June 2013): Clear Lake
Legend
Highly Scattered
Scattered
Dominant
Highly Dominant
Surface Matting
Single or Few Plants
Clumps of Plants
Small Plant Colony


CLP Survey Results (June 2013):
Manitowish Lake
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Thank You
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Wisconsin
Lakes
Partnership
UW
Extension
Onterra LLC
Lake Management Planning

Presentation Outline

- Current Project Overview
  - Planning Process
  - Phase I Lakes Study Results
    - Water Quality
    - Watershed
    - Shoreland Assessment
    - Aquatic Plants
    - Fisheries
  - Chain-wide AIS Discussion
  - Wild-rice Discussion
- Next Steps

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Lake Management Planning

Manitowish Chain Lakes Management Planning Process

- Chain-wide project brings on unique situation
  - Cost savings are great
  - Providing attention to individual lakes can be difficult
- Board of Directors & other representatives
  - Communication link for lake stakeholders
- Stakeholder survey information will be important

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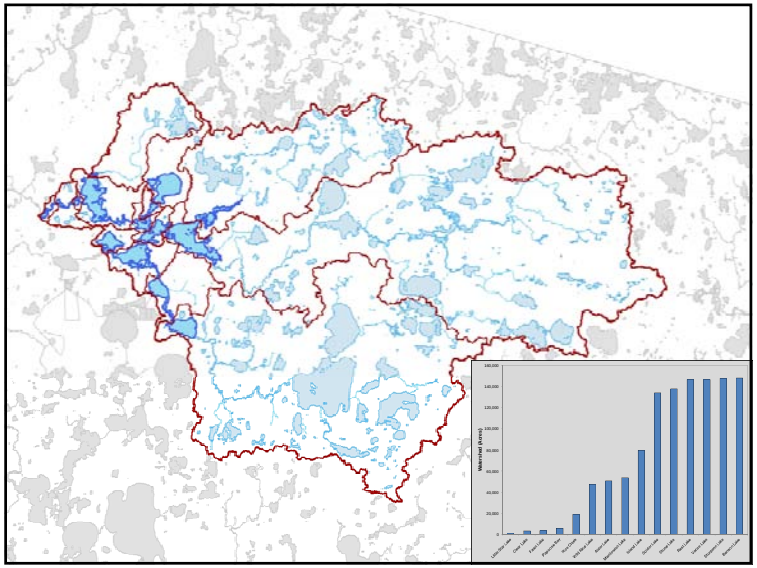
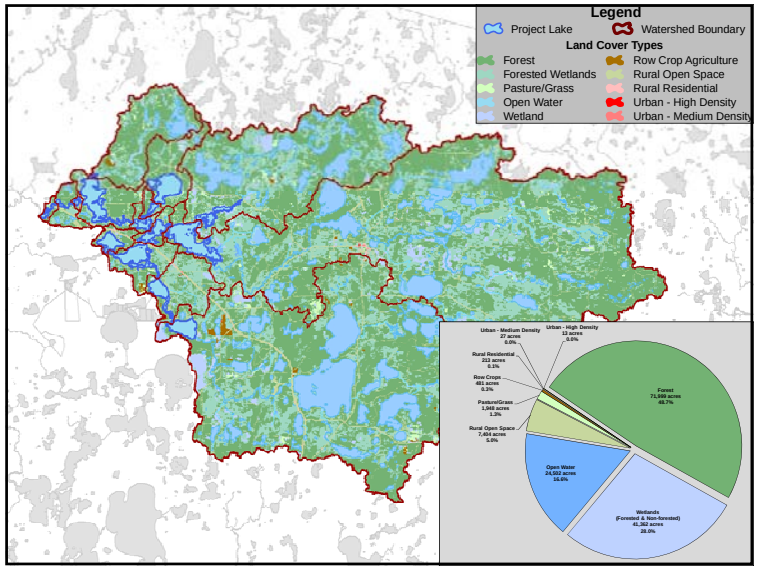
Lake Management Planning





Shoreland Assessment

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

Urbanized → Range → **Natural**

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Lake Management Planning

Shoreline Assessment Category Descriptions

More Natural Habitat

Urbanized | Developed-Unnatural | Developed-Semi-Natural | Developed-Natural | Natural/Undeveloped

Greater Need for Restoration

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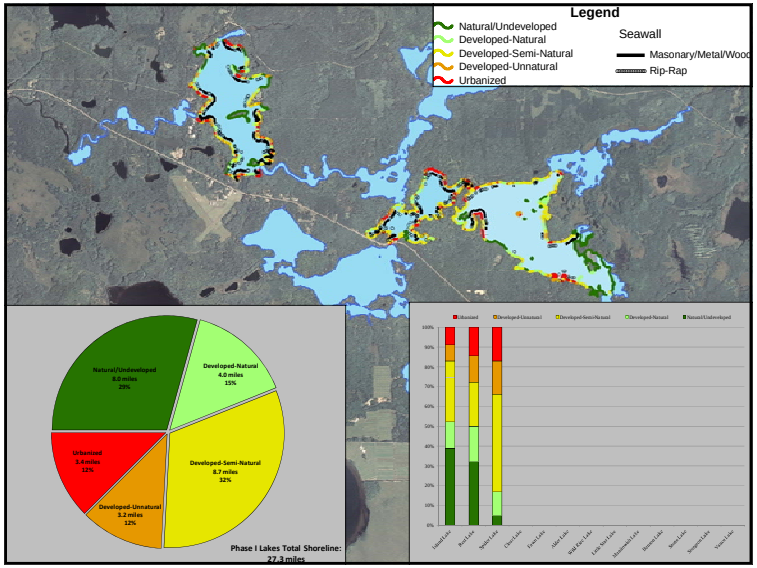

Coarse Woody Habitat

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

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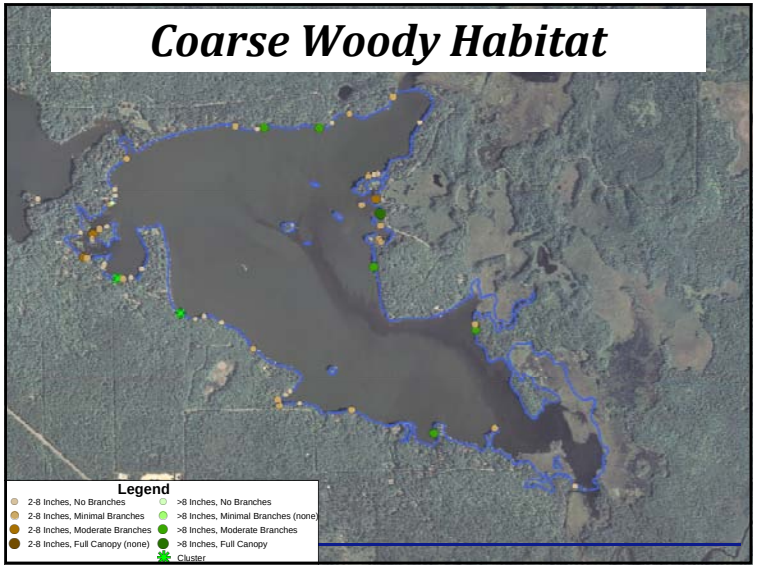
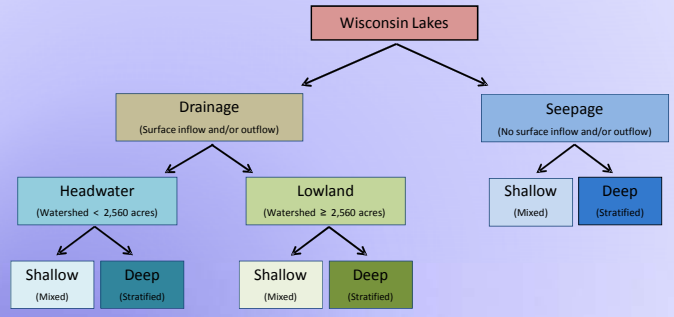
Coarse Woody Habitat



Wisconsin Lakes Classification*



Rest Lake
Island Lake
Spider Lake

**Phase I Lakes*

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Water Quality

↑ Phosphorus (Limiting Plant Nutrient)

↑ Chlorophyll-*a* (Algal Abundance)

↓ Water Clarity (Secchi Disk)

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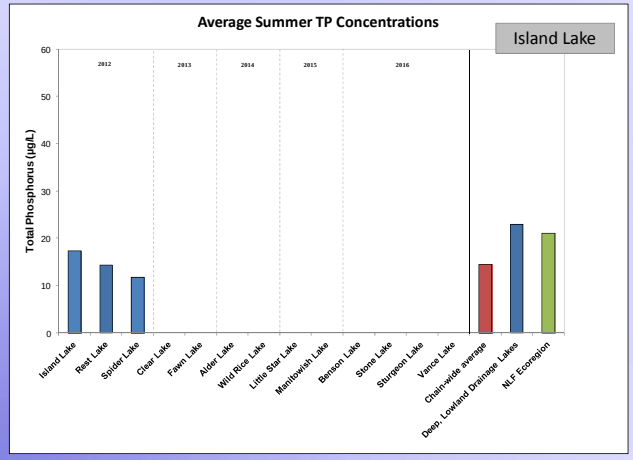
Total Phosphorus



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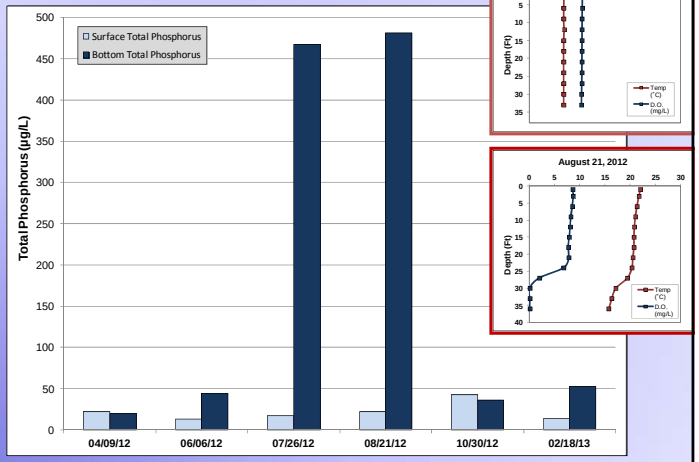
Lake Management Planning

Total Phosphorus



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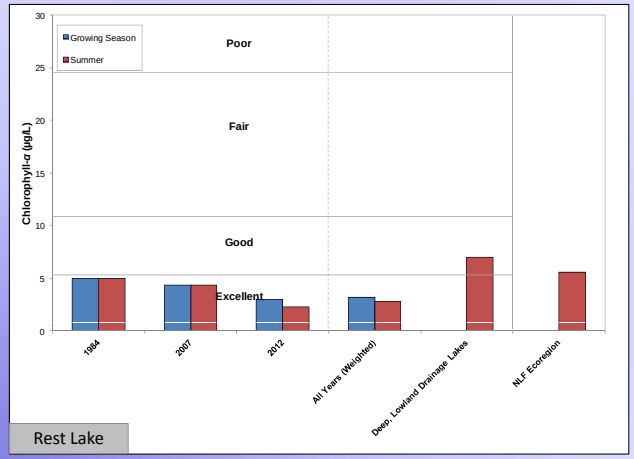
Lake Management Planning

Chlorophyll-*a*



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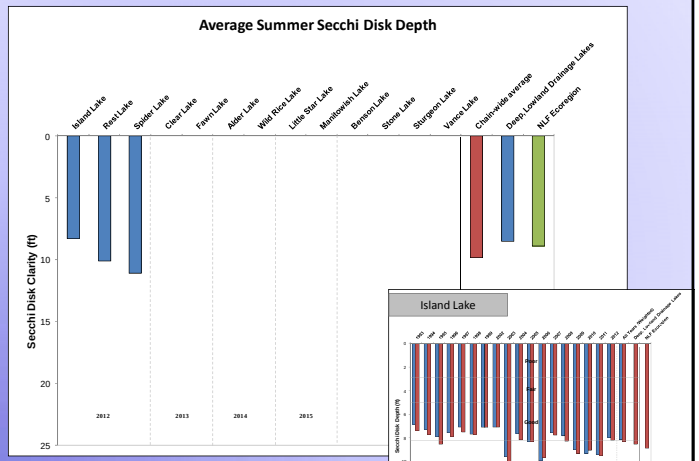
Secchi Disk Clarity



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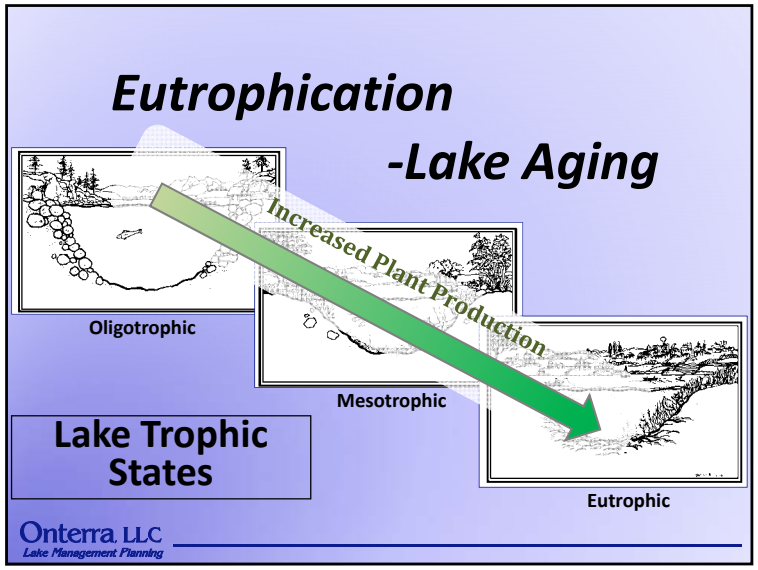
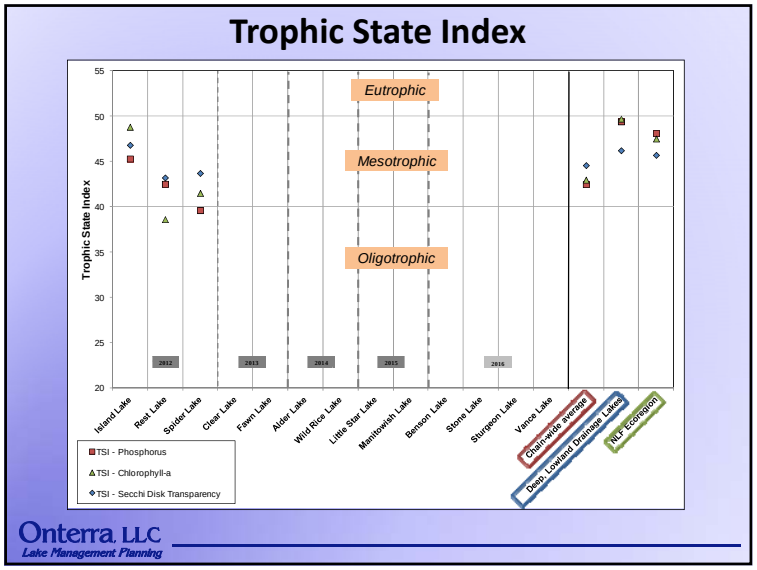
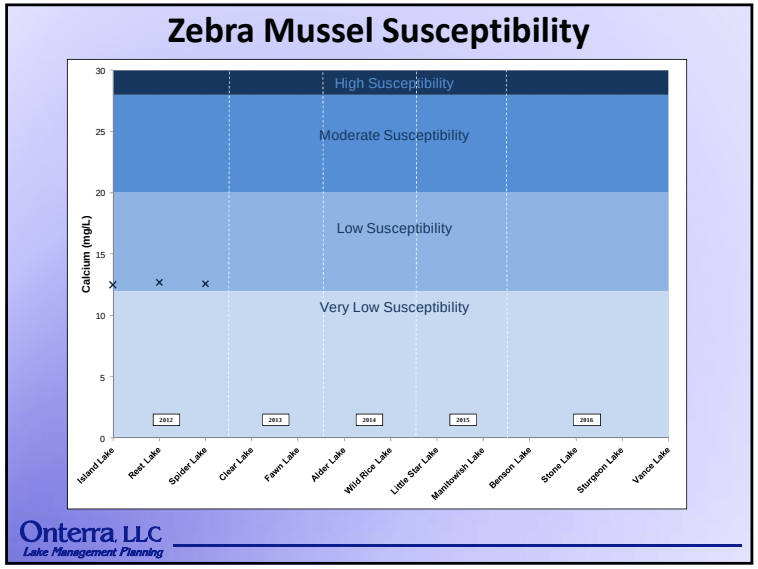
Lake Management Planning







Aquatic Plant Surveys

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

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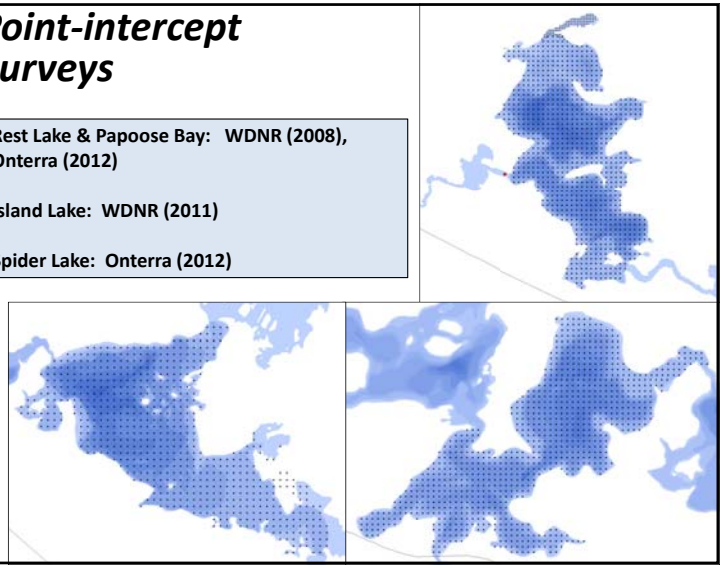
Point-intercept Surveys

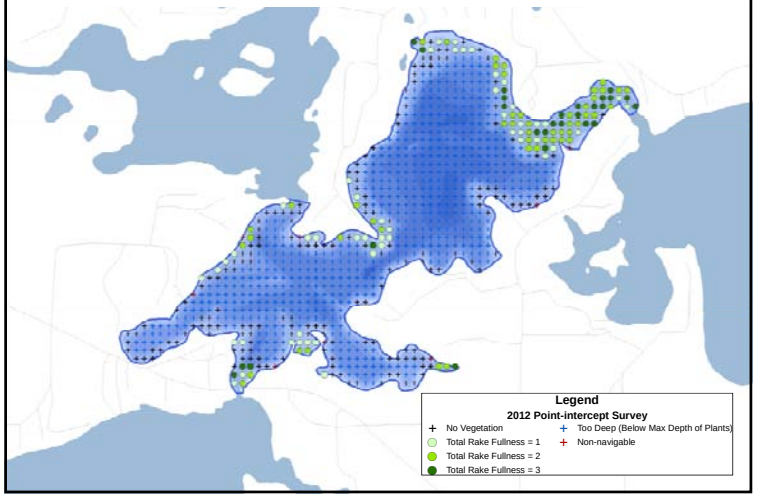
Rest Lake & Papoose Bay: WDNR (2008), Onterra (2012)

Island Lake: WDNR (2011)

Spider Lake: Onterra (2012)



Understanding aquatic plant distribution



Plant Data Overview

- 62 Native plants
  - 28 Submergent
  - 21 Emergent
  - 4 Floating-leaf
  - 4 Floating-leaf/Emergent
  - 3 Submergent/Emergent
  - 2 Free-floating
- 5 Non-native plant species
  - Curly-leaf pondweed
  - Purple loosestrife
  - Reed canary grass
  - Common forget-me-not
  - Pale yellow iris

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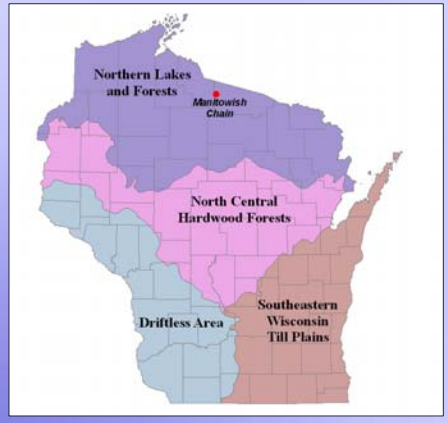
Aquatic Plants



Wisconsin Ecoregions

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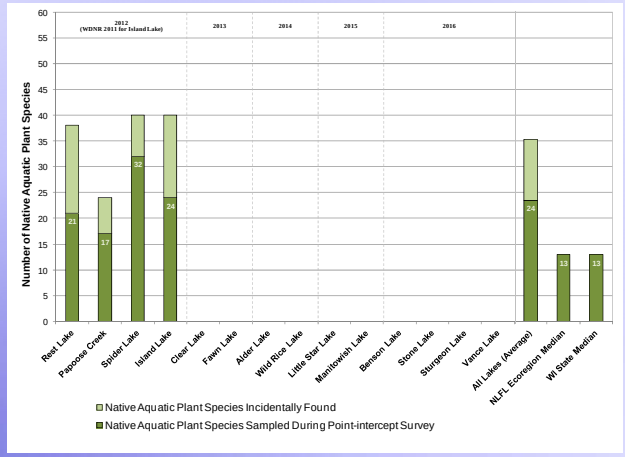
Species Richness



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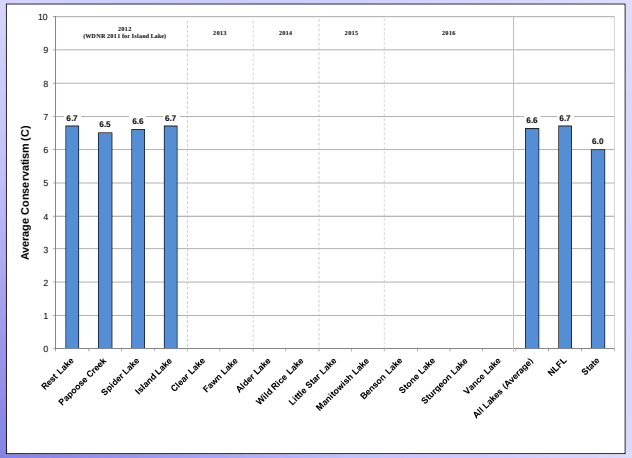
Average Conservatism



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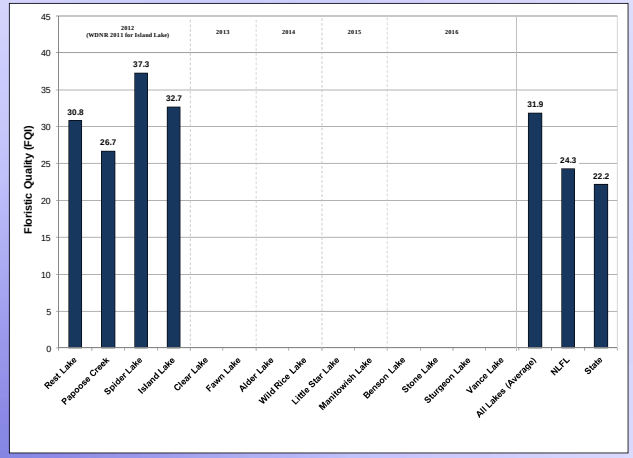
Floristic Quality



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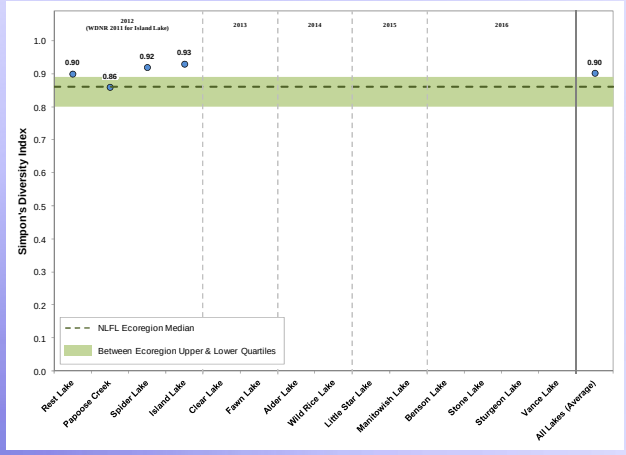
Simpson's Diversity



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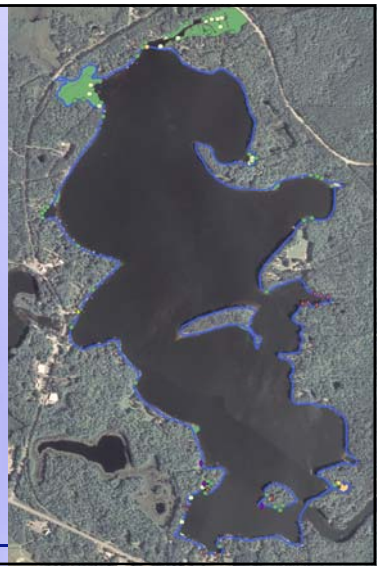
Community Mapping

Understand locations and types of emergent, floating-leaf species
- Spawning habitat
- Food source
- Shoreline stabilization



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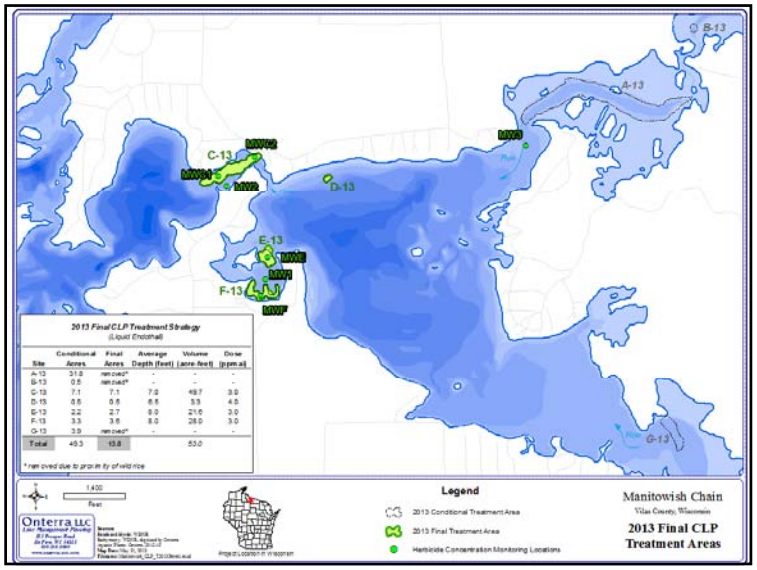

Herbicide Use Patterns

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

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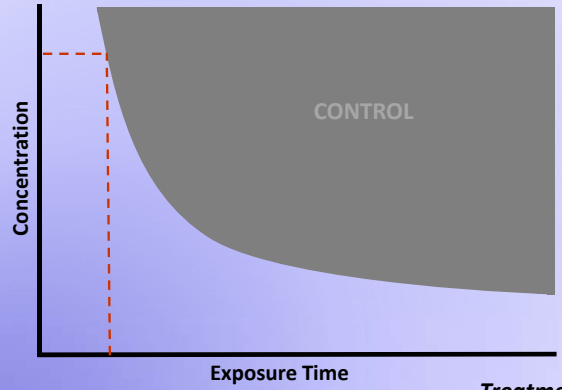
Herbicide Use Patterns



Treatment Type
Spot

High Dose ► Short Exposure Time

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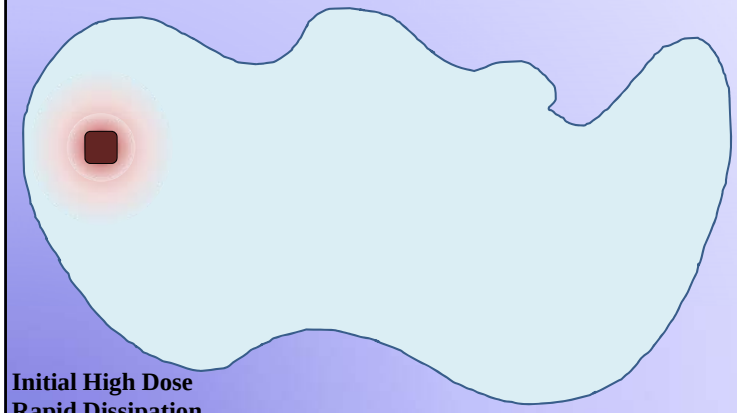
Spot Treatment Use Pattern



Initial High Dose
Rapid Dissipation
Herbicide concentrations too low outside of Treatment Area to cause impact

NR 107 – Aquatic Plant Management Conditions

(1) The department may stop or limit the application of chemicals to a body of water if at any time it determines that chemical treatment will be ineffective, or will result in unreasonable restrictions on current water uses, or will produce unnecessary adverse side effects on non-target organisms.

(4) Treatment of areas containing high value species of aquatic plants shall be done in a manner which will not result in adverse long–term or permanent changes to a plant community in a specific aquatic ecosystem.

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How do they work?

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

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Are herbicides "safe?"

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

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

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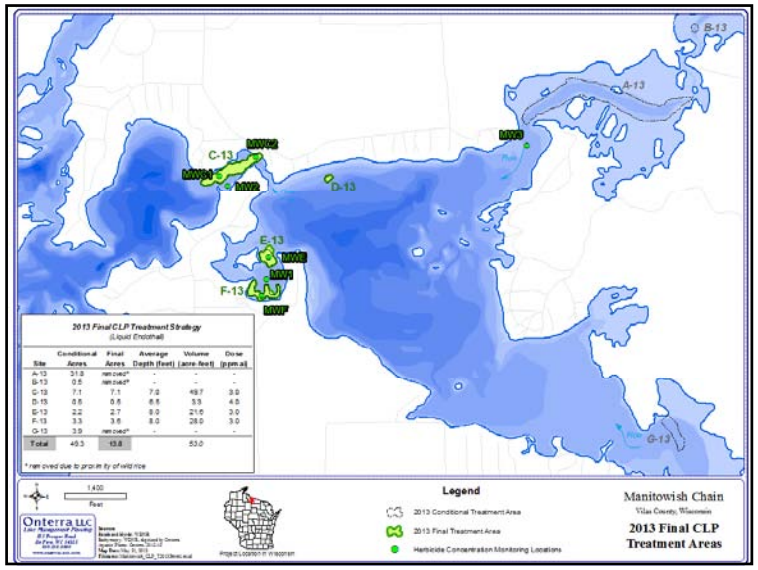
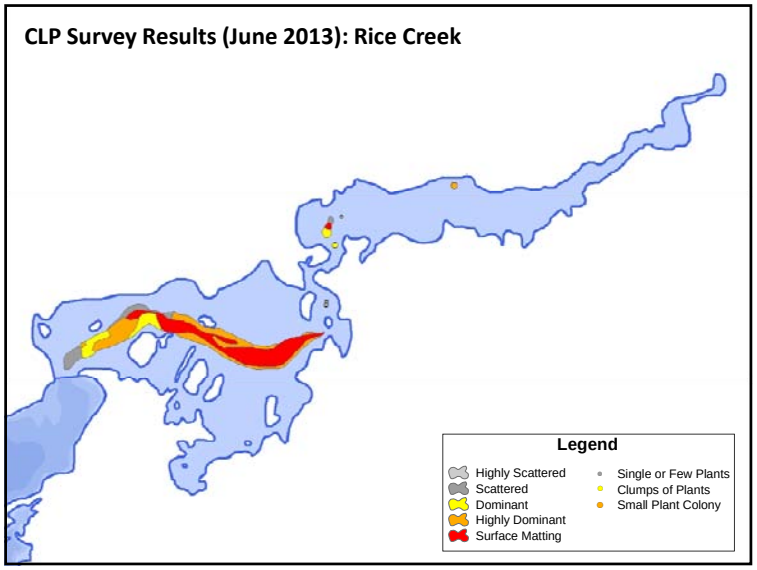
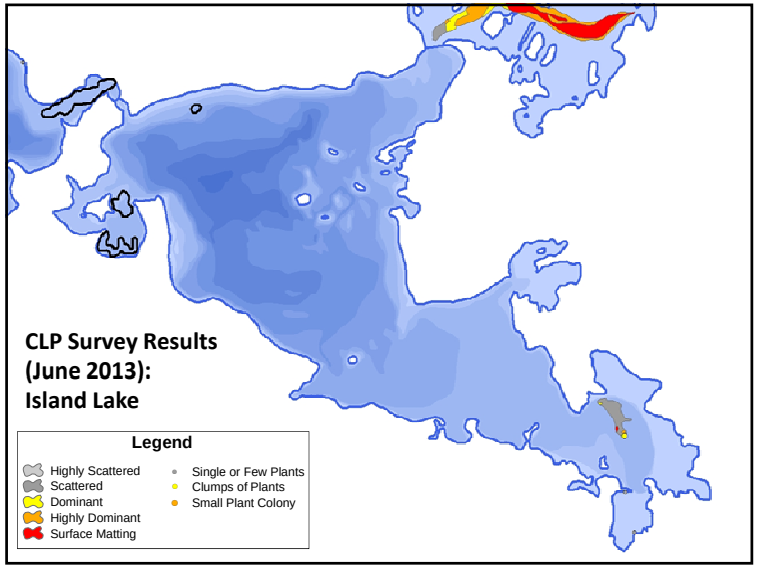
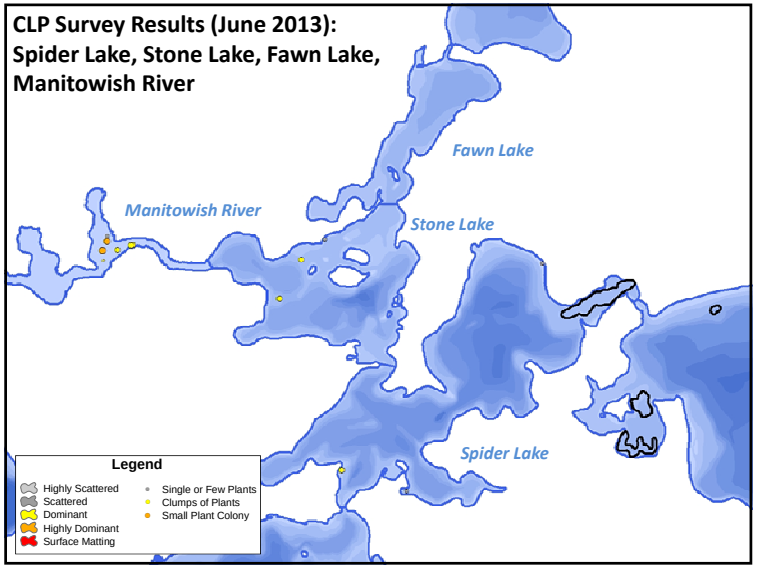
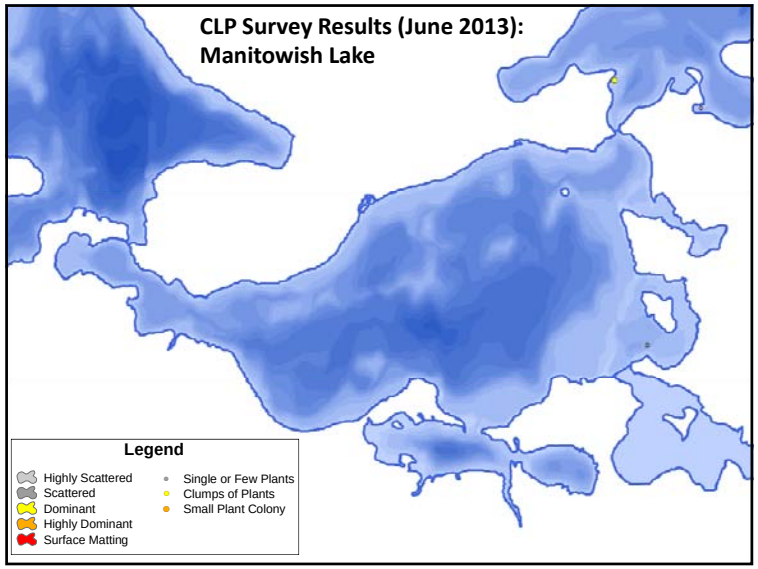

C-13
D-13
E-13
F-13
G-13
Legend
Manitowish Chain
2013 Final CLP Treatment Areas


CLP Survey Results (June 2013): Rice Creek
Legend
Highly Scattered
Scattered
Dominant
Highly Dominant
Surface Matting
Single or Few Plants
Clumps of Plants
Small Plant Colony


CLP Survey Results
(June 2013):
Island Lake
Legend
Highly Scattered
Scattered
Dominant
Highly Dominant
Surface Matting
Single or Few Plants
Clumps of Plants
Small Plant Colony


CLP Survey Results (June 2013):
Spider Lake, Stone Lake, Fawn Lake,
Manitowish River
Fawn Lake
Manitowish River
Stone Lake
Spider Lake
Legend
Highly Scattered
Scattered
Dominant
Highly Dominant
Surface Matting
Single or Few Plants
Clumps of Plants
Small Plant Colony



Northern Wild Rice (Zizania palustris)

Optimal Habitat

- **Flowing water (Rivers & Flowages)**
- **Clear Water; Depth of 0.5-3 feet; pH 6.0-8.0**
- **Periodic Water Level Fluctuations**
  - **Stable/Slight Decline Growing Season**
  - **Winter drawdown**
- **Soft Organic Muck**

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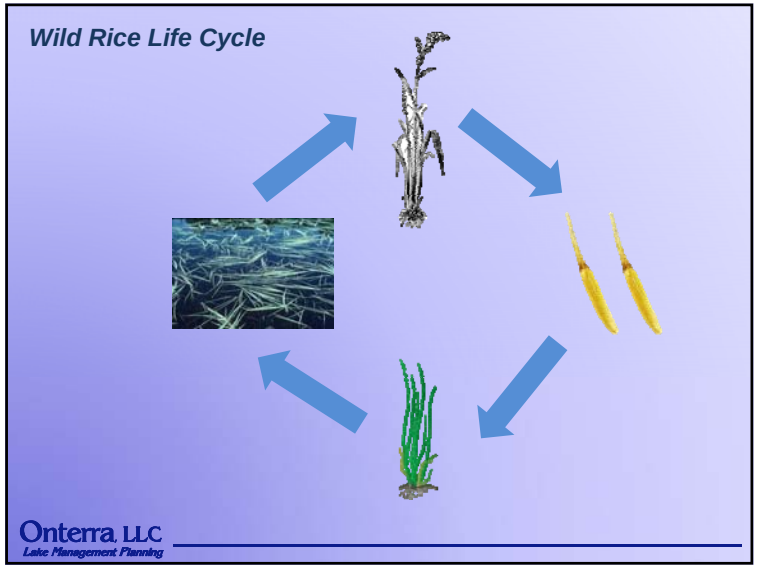

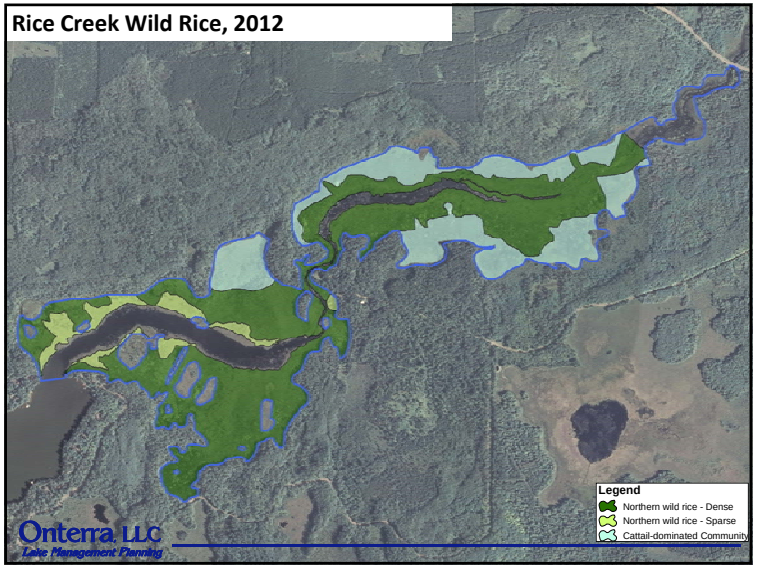

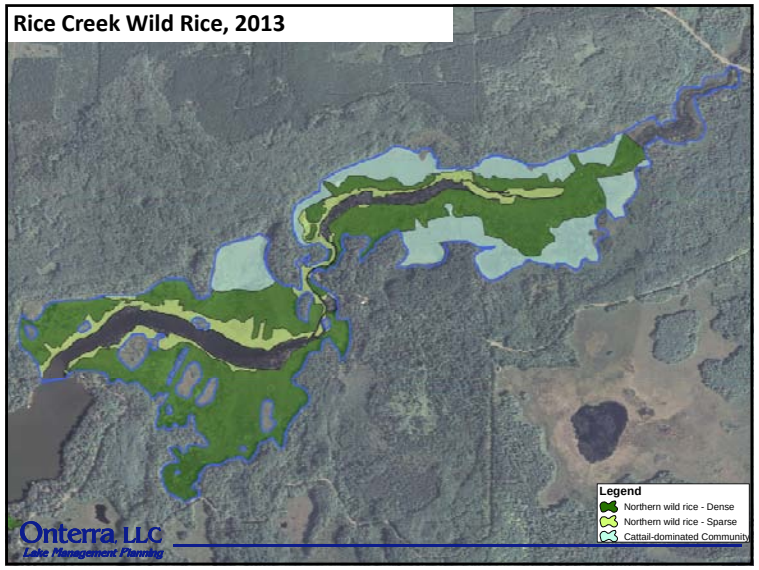
Rice Creek Wild Rice, 2013
Legend
Northern wild rice - Dense
Northern wild rice - Sparse
Cattail-dominated Community
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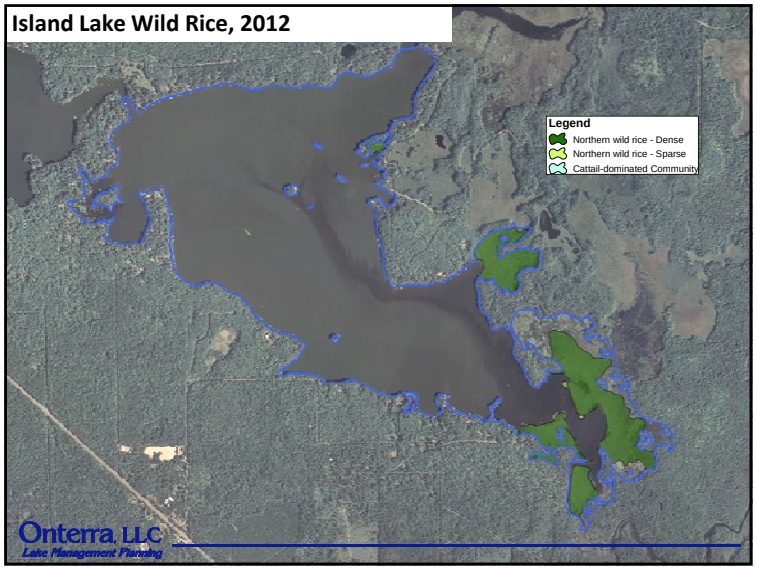
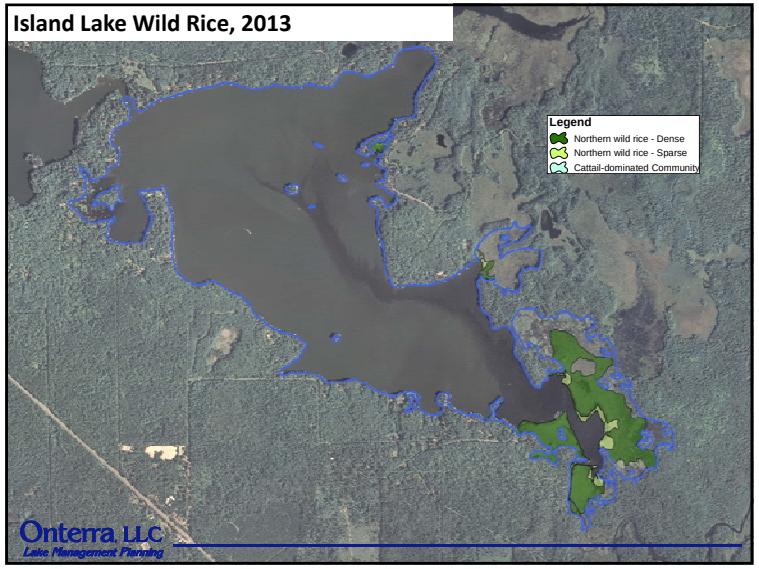

Island Lake Wild Rice, 2012
Legend
Northern wild rice - Dense
Northern wild rice - Sparse
Cattail-dominated Community
Onterra LLC
Lake Management Planning


Island Lake Wild Rice, 2013
Legend
Northern wild rice - Dense
Northern wild rice - Sparse
Cattail-dominated Community
Onterra LLC
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Papoose Bay, 2012
Legend
Northern Wild Rice
Dense Plant Community
Sparse Plant Community
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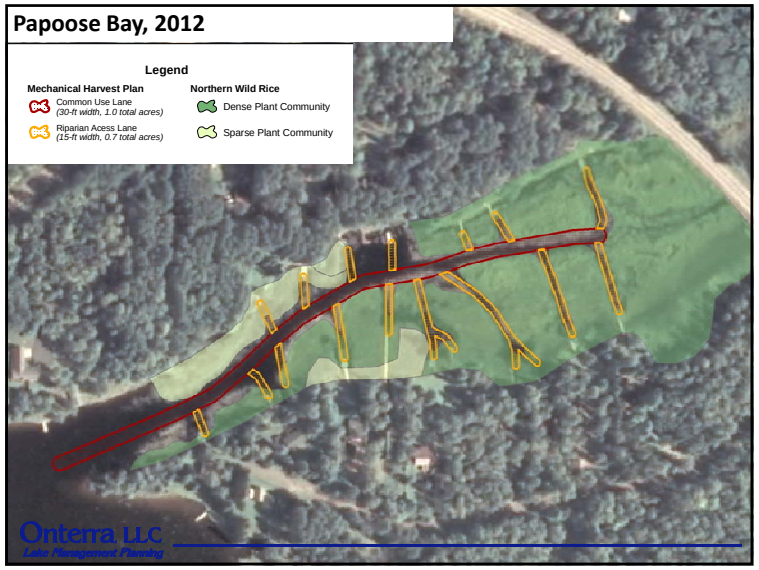
Papoose Bay, 2012
Legend
Mechanical Harvest Plan
Common Use Lane
(30-ft width, 1.0 total acres)
Riparian Acess Lane
(15-ft width, 0.7 total acres)
Northern Wild Rice
Dense Plant Community
Sparse Plant Community
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Native American Spear Harvest
Manitowish Chain
Treaty of 1837
Treaty of 1842
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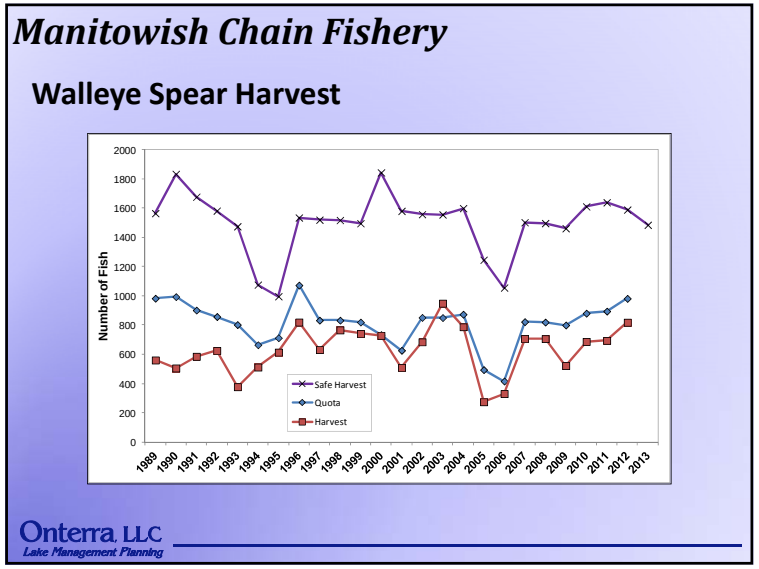
Manitowish Chain Fishery
Walleye Spear Harvest
Number of Fish
Safe Harvest
Quota
Harvest
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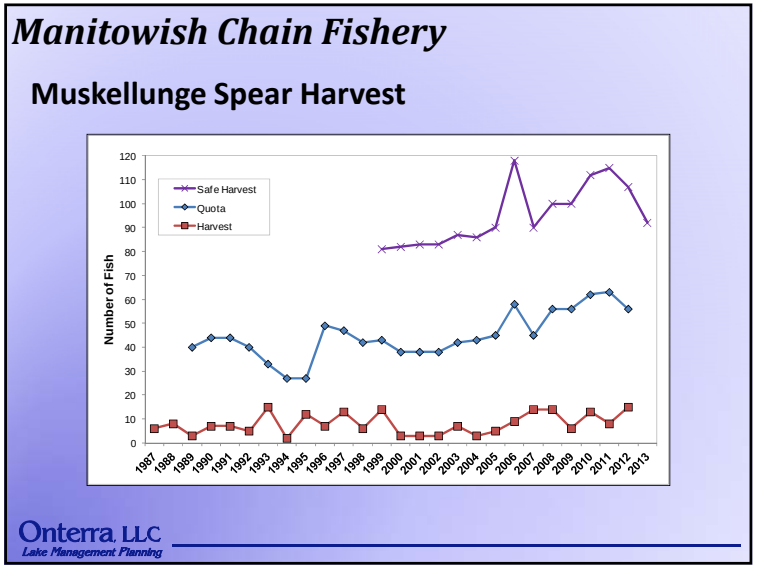
Manitowish Chain Fishery
Muskellunge Spear Harvest
Number of Fish
Safe Harvest
Quota
Harvest
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Manitowish Chain Fishery

Diverse and unique fishery exists

- 35 fish species documented upstream of dam
  - Three species of special concern (threatened)
    - Greater redhorse, pugnose shiner, longear sunfish
  - Lake herring and lake whitefish present
    - Inland lake populations rare within the USA, WI
- 42 fish species documented downstream of dam
  - Lake sturgeon is a special concern/heritage species in WI

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Conclusions

- Watershed is in great condition
  - Land cover is of high quality
  - Large, heavily forested watershed is responsible for stained waters
- Water quality is great
  - Limited data show water quality is better than expected for lakes of this type, within this region
  - Lakes are considered in a mesotrophic state
- Aquatic plant community
  - Based upon standard analysis, native community is of high quality
  - AIS discovered on several lakes
    - Curly-leaf pondweed poses biggest threat to ecosystem

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Next Steps…

1. **Develop Phase I Implementation Plan framework**
   - Management Goals for entire chain
   - Specify applicability to individual lakes
   - Specific lake issues
2. **Submit Phase I plan to WDNR**
3. **Complete Phase IIIb grant for February 1, 2014 deadline**
4. **Proceed with Phase III studies, AIS monitoring and AIS educational activities in 2014**
5. **Meet regarding Phase II lakes, revise Implementation Plan as needed**

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Thank You

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

Wisconsin Lakes Partnership

UW Extension

Wisconsin Dept. of Natural Resources

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Current Funding Overview

- Lake Management Planning Grant
  - Received Aug 2011
- AIS Education, Prevention and Planning Grants
  - Received Feb 2012, Aug 2012 and Feb 2013
- AIS Early Detection and Response Grants
  - Received Feb 2012 & 2013

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Project Components

Scientific Studies

- Aquatic Plant Surveys
  - Native
  - Non-Native
- Water Quality Monitoring
- Watershed Delineation/Modeling
- Fishery Data Compilation and Integration
- Shoreland Development Surveys

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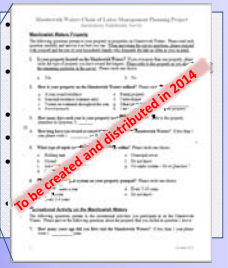
Project Components

Public Participation & Engagement

- Public meetings
- Anonymous stakeholder survey
- Volunteer Activities
- Educational Campaign



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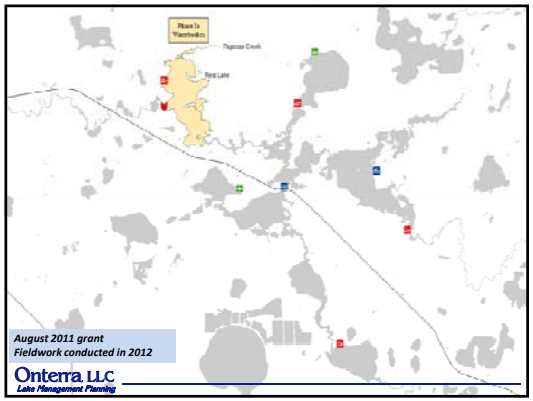

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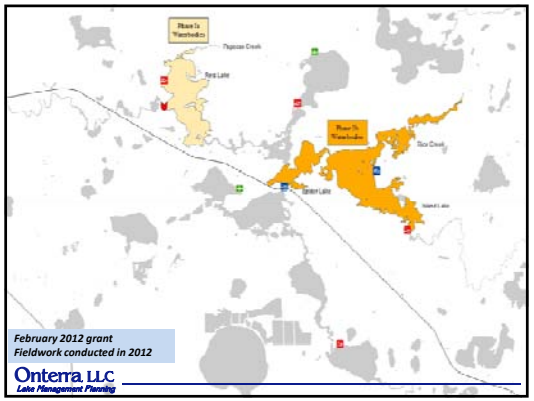

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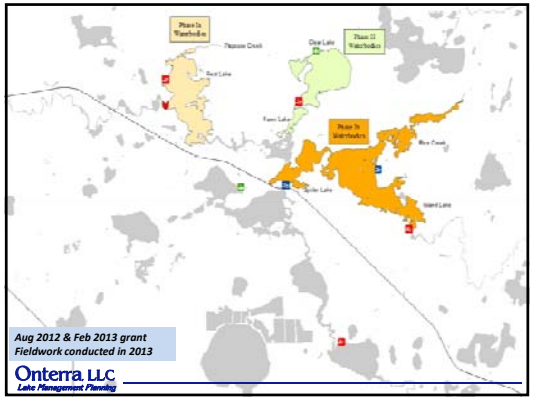

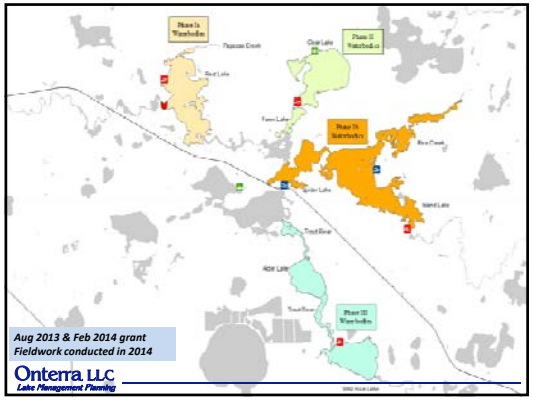

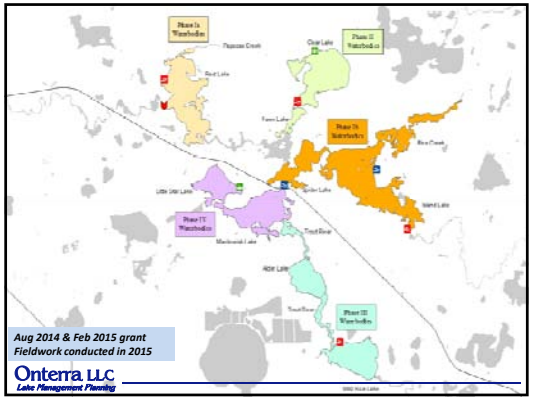

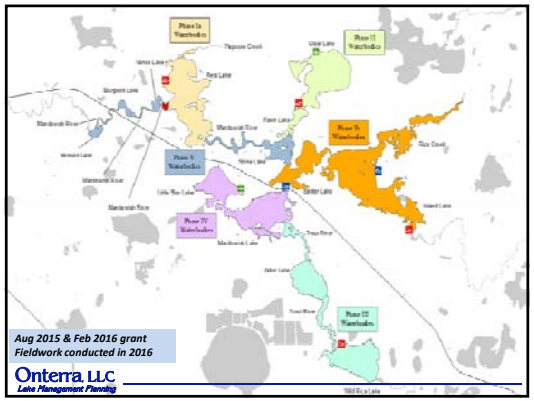

Next Steps in Planning Process

- August 1 AIS-EPP grant submittal
- AIS-EDR grant to fund further CLP treatments
- Proceed with 2013 summer surveys
  - Water quality monitoring
  - Aquatic plant studies
  - Shoreland development surveys
- Phase I & II Planning Process

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Curly-leaf Pondweed Monitoring

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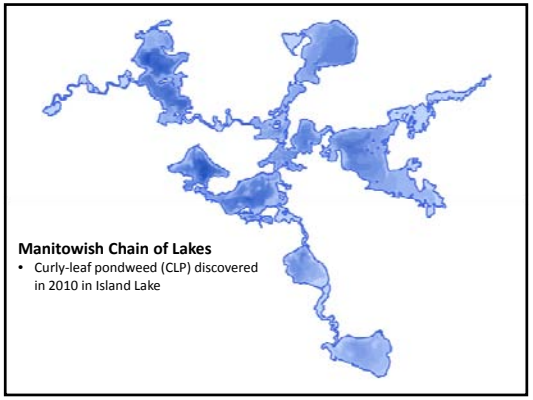
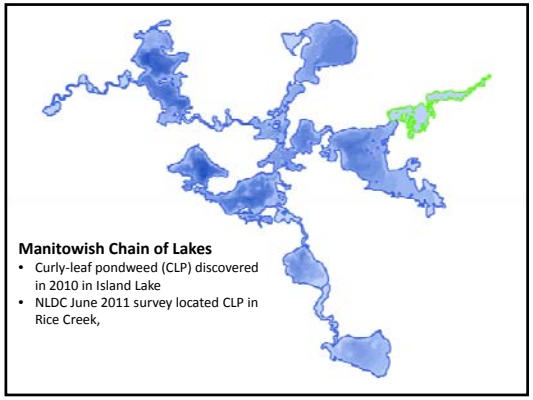
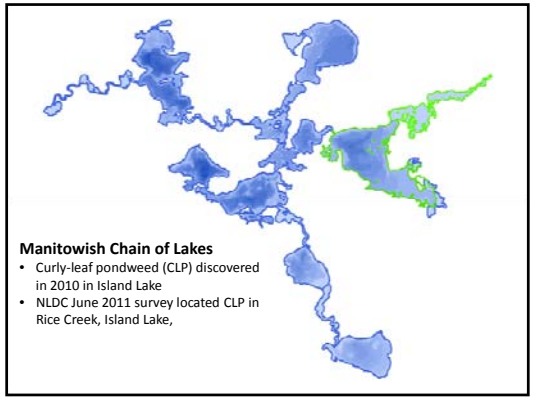
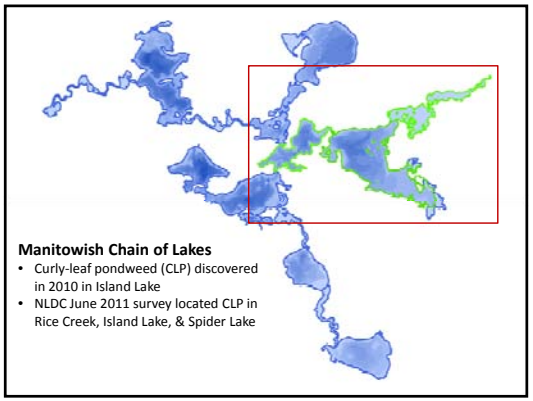
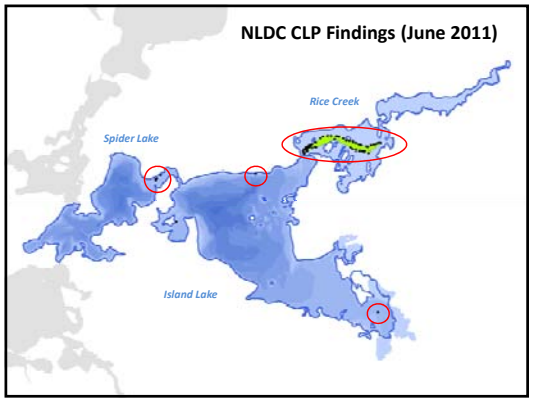
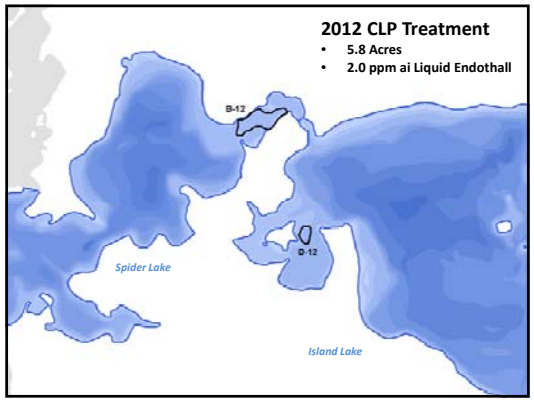

Manitowish Chain of Lakes
• Curly-leaf pondweed (CLP) discovered in 2010 in Island Lake

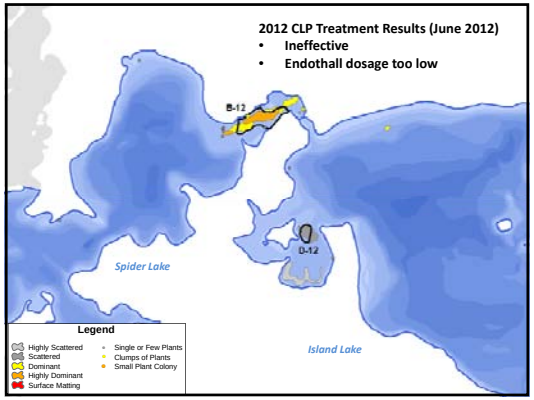

Manitowish Chain of Lakes
• Curly-leaf pondweed (CLP) discovered in 2010 in Island Lake
• NLDC June 2011 survey located CLP in Rice Creek,

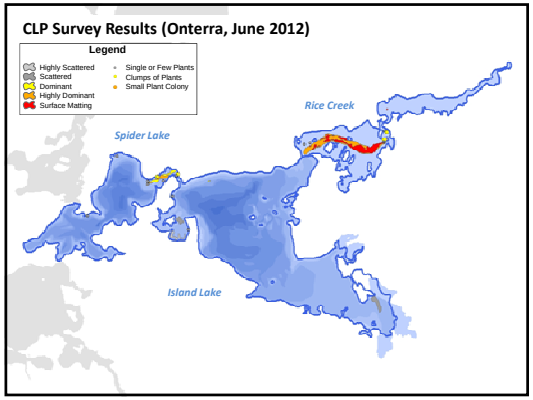

Manitowish Chain of Lakes
• Curly-leaf pondweed (CLP) discovered in 2010 in Island Lake
• NLDC June 2011 survey located CLP in Rice Creek, Island Lake,

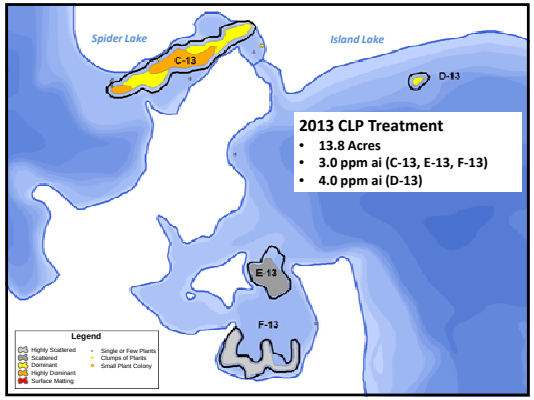

Manitowish Chain of Lakes
• Curly-leaf pondweed (CLP) discovered in 2010 in Island Lake
• NLDC June 2011 survey located CLP in Rice Creek, Island Lake, & Spider Lake

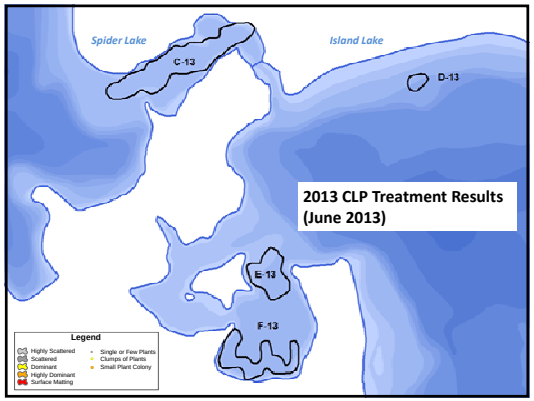

NLDC CLP Findings (June 2011)
Rice Creek
Spider Lake
Island Lake

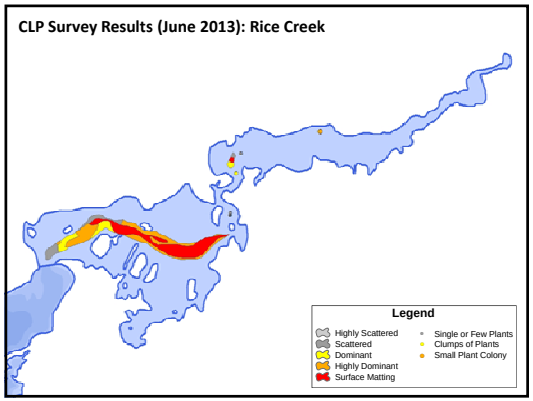

2012 CLP Treatment
• 5.8 Acres
• 2.0 ppm ai Liquid Endothall
B-12
B-12
Spider Lake
Island Lake

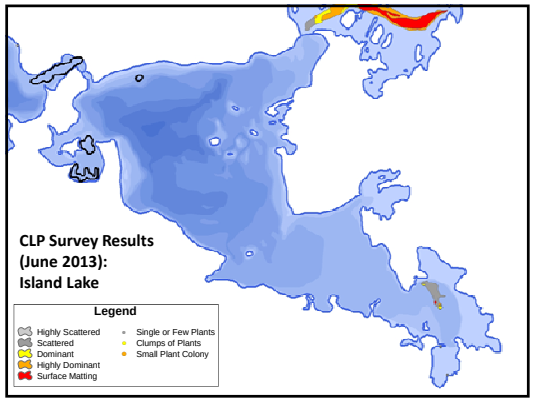

2012 CLP Treatment Results (June 2012)
• Ineffective
• Endothall dosage too low
B-12
D-12
Spider Lake
Island Lake
Legend
Highly Scattered
Scattered
Dominant
Highly Dominant
Surface Matting
Single or Few Plants
Clumps of Plants
Small Plant Colony

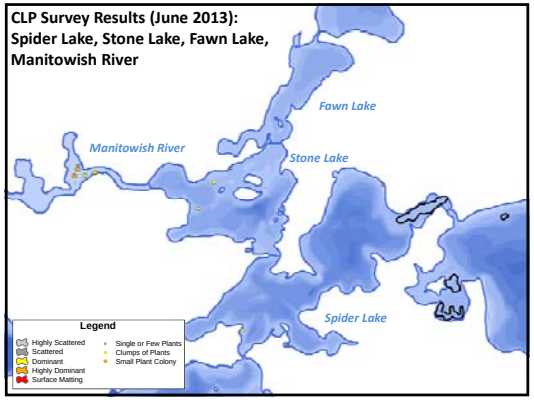

CLP Survey Results (Onterra, June 2012)
Legend
Highly Scattered
Scattered
Dominant
Highly Dominant
Surface Matting
Single or Few Plants
Clumps of Plants
Small Plant Colony
Rice Creek
Spider Lake
Island Lake

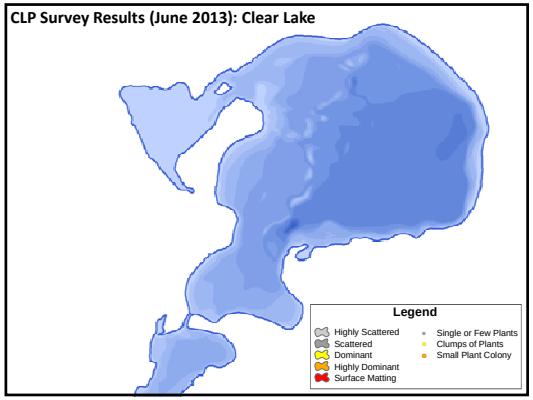

Spider Lake
Island Lake
C-13
D-13
2013 CLP Treatment
• 13.8 Acres
• 3.0 ppm ai (C-13, E-13, F-13)
• 4.0 ppm ai (D-13)
E-13
F-13
Legend
Highly Scattered
Scattered
Dominant
Highly Dominant
Surface Matting
Single or Few Plants
Clumps of Plants
Small Plant Colony

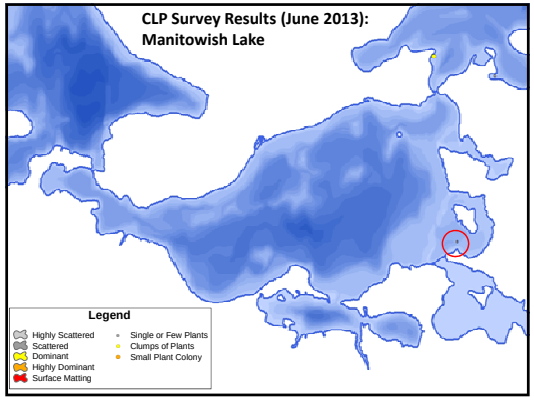

Spider Lake
Island Lake
C-13
D-13
2013 CLP Treatment Results
(June 2013)
E-13
F-13
Legend
Highly Scattered
Scattered
Dominant
Highly Dominant
Surface Matting
Single or Few Plants
Clumps of Plants
Small Plant Colony


CLP Survey Results (June 2013): Rice Creek
Legend
Highly Scattered
Scattered
Dominant
Highly Dominant
Surface Matting
Single or Few Plants
Clumps of Plants
Small Plant Colony


CLP Survey Results
(June 2013):
Island Lake
Legend
Highly Scattered
Scattered
Dominant
Highly Dominant
Surface Matting
Single or Few Plants
Clumps of Plants
Small Plant Colony


CLP Survey Results (June 2013):
Spider Lake, Stone Lake, Fawn Lake,
Manitowish River
Fawn Lake
Manitowish River
Stone Lake
Spider Lake
Legend
Highly Scattered
Scattered
Dominant
Highly Dominant
Surface Matting
Single or Few Plants
Clumps of Plants
Small Plant Colony


CLP Survey Results (June 2013): Clear Lake
Legend
Highly Scattered
Scattered
Dominant
Highly Dominant
Surface Matting
Single or Few Plants
Clumps of Plants
Small Plant Colony


CLP Survey Results (June 2013):
Manitowish Lake
Legend
Highly Scattered
Scattered
Dominant
Highly Dominant
Surface Matting
Single or Few Plants
Clumps of Plants
Small Plant Colony

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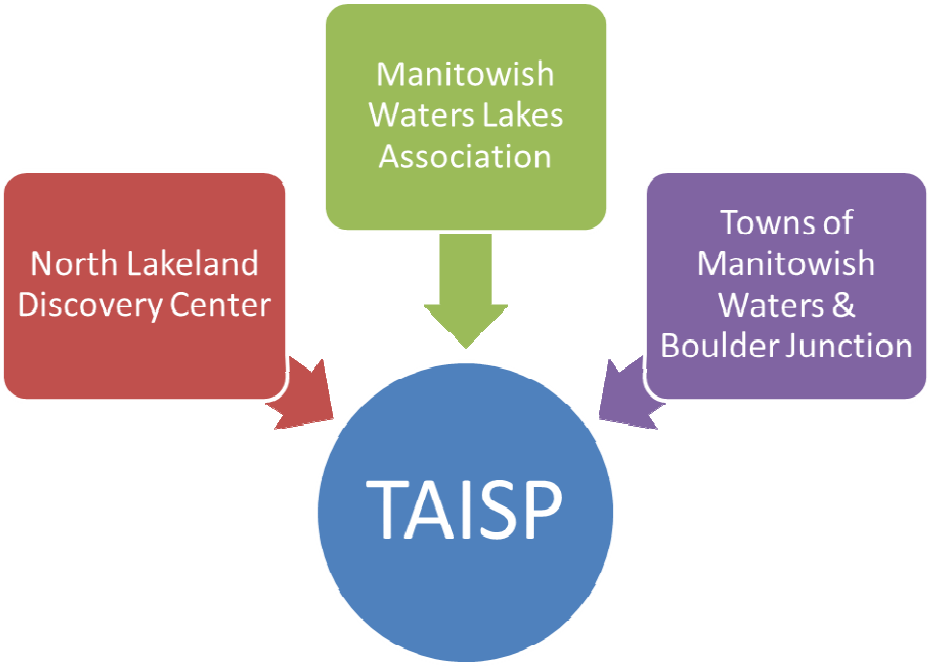
North Lakeland Discovery Center

P.O.Box 237, Manitowish Waters, WI 54545 (715)543-2085 contact@discoverycenter.net www.DiscoveryCenter.net

To Enrich Lives and Inspire an Ethic of Care of Wisconsin's Northwoods, through the Facilitation of Connections among Nature, People and Community

North Lakeland Discovery Center, the Manitowish Waters Lakes Association, and the Towns of Manitowish Waters and Boulder Junction
2013 Town Aquatic Invasive Species Partnership (TAISP) Program



North Lakeland Discovery Center	Manitowish Waters Lakes Association	Towns of Manitowish Waters & Boulder Junction
• Coordinate program • Integrate AIS-related activities into programs, website, social media, press releases, etc… • Coordinate WDNR grant	• Aid in recruitment of volunteers • Integrate AIS-related activities into newsletter, website, meetings, public announcements, etc…	• Aid in recruitment of volunteers • Facilities, annual feedback, posting AIS information, and other support • Funding

Figure 1. Model of the town aquatic invasive species partnership (TAISP) program consisting of the North Lakeland Discovery Center, Manitowish waters Lakes Association, and the Towns of Manitowish Waters and Boulder Junction.

The TAISP Partnership

The Town Aquatic Invasive Species Partnership (TAISP; Figure 1) consisting of the North Lakeland Discovery Center (NLDC), the Manitowish Waters Lakes Association (MWLA), and the Towns of Manitowish Waters (MW), and Boulder Junction (BJ) undertook efforts in 2013 to prevent the introduction of and minimize the spread of aquatic invasive species (AIS) in area waters and wetlands. TAISP had a very successful program in 2013 with all goals and objectives of the agreement met or exceeded (Appendix A).

The NLDC coordinated the Aquatic Invasive Species Program with staffing of Anne Kretschmann, Aquatic Invasive Species Coordinator and Water Specialist; Tim Dobbins, Water Education Intern; and Gretchen Peterson and Maria Kopecky, Clean Boats, Clean Waters Watercraft Inspectors; with funding provided by the Towns of MW and BJ and through grants received from the Wisconsin Department of Natural Resources (WDNR). All grants awarded in through WDNR grants require a match from TAISP in the form of either cash match or volunteer hours (e.g. Clean Boats Clean Waters, AIS monitoring, etc.) In 2013, NLDC staff and volunteers spent over 200 hours conducting watercraft inspections and educating boaters at boat landings on the MW Chain to fulfill grant requirements.

The NLDC integrated AIS-related activities into their programs, website, social media, press releases, and other appropriate activities and venues (see Appendix B). The Town of MW aided in the recruitment of volunteers, provided other support such as facilities, provided annual feedback to partners, posted AIS information on bulletin boards, boat landings, and other Town-owned facilities, and disseminated information at appropriate venues. The Manitowish Waters Lakes Association aided in the recruitment of volunteers and integrated AIS-related activities into their newsletter, website, meetings, public announcements, and other venues.

High Priority Items

One item identified as a high priority at the beginning of the 2013 summer season was to monitor all MW lakes and waters/rivers connected to the Chain; quantifying and mapping all AIS infestations, thus providing baseline data to enable professionals to more effectively and efficiently manage AIS in the MW Chain of Lakes and surrounding area. We expanded the 'Lake Captain and Deckhand' Program, in which every lake in the chain has trained volunteer 'Captains' monitoring for AIS with assistance from 'Deckhands'. This program takes advantage of the expertise and knowledge of volunteers who live or fish on the lakes that they are monitoring. We plan to continue this program, as it has proven an effective way to gain public interest, awareness, and involvement in AIS issues in the area. For example, after the 2010 'Lake Captain' training session, a volunteer 'Captain' found curly leaf pondweed in the chain the following day.

Curly-leaf Pondweed Update

Curly leaf pondweed was first detected in the Manitowish Waters Chain of Lakes in 2010 (small patches in Island Lake and Rice Creek) (Figure 2). In 2011, two more additional areas were identified in the chain, at the mouth of the Manitowish River at Island Lake (a few plants), and in the Spider-Island Channel (widespread on the Spider Lake end of the channel). In 2011, NLDC assisted the Vilas County Invasive Species Coordinator in mapping the population in Rice Creek and it was determined to be approximately 22 acres. NLDC assisted the WI-DNR with a Point

Intercept Survey of Island Lake and Rice Creek in 2011, which surveyed the quantity and variety of all aquatic plants present. During surveys conducted by Onterra, LLC in 2012, additional areas were identified in Island Lake (scattered plants in the bay behind the island in the Southwestern corner) and in Spider Lake (total of 49.3 acres). On June 21, 2012, an additional area was identified by NLDC staff and volunteers in Stone Lake (a few plants), immediately reported to interested parties and hand pulled. In 2013, additional areas were found and subsequently hand-harvested in Stone Lake (west side), Spider Lake, and one location on Manitowish Lake. On June 20, 2013, a larger infestation was found in the Rest-Stone Channel by NLDC, volunteers, and Ted Ritter during an Aquatic Vegetation Workshop hosted by the NLDC. Subsequently, Onterra mapped the infestation which was determined to be approximately 3.9 acres. On June 16, 2013, Tom Joseph and Rest Lake Deckhands reported fragments of curly leaf pondweed floating in Papoose Bay, however no rooted plants were found during follow-up monitoring by the NLDC and volunteers.

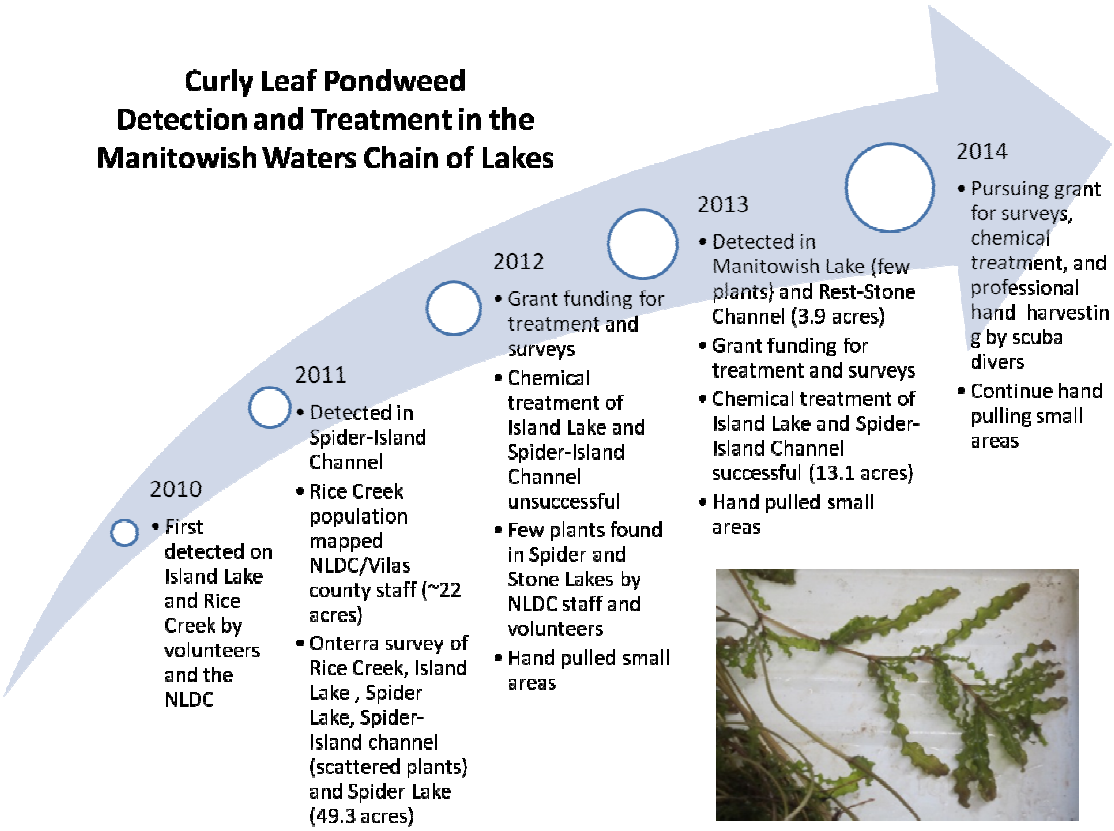


Figure 2. Timeline of significant curly leaf pondweed detection and treatment events in the Manitowish Waters Chain of Lakes.

A concerted effort was made in 2013 by NLDC staff and committed volunteers to survey the entire chain of lakes, associated river sections, river sections leading into/away from the chain, and selected unconnected lakes in the Manitowish Waters area for curly leaf pondweed. These surveys included the entire Manitowish Waters Chain of Lakes, Rice Creek from Big Lake to Island Lake; Manitowish River from County Highway H to Island Lake; Trout River from

County Highway H to Wild Rice Lake; Manitowish River from Rest Lake Dam downstream to the Hwy 47/182 bridge in the town of Manitowish including Benson, Vance, and Sturgeon Lakes; Circle Lily, Statehouse, and Stepping Stones Lakes (lakes unconnected to the MW chain of lakes). The NLDC anticipates conducting similar surveys yearly in waters not being surveyed by Onterra, LLC.

In 2013, NLDC staff monitored the water quality with a Hach® meter in infested and non-infested baseline locations as the plant was senescing in mid-summer to ensure that dissolved oxygen issues were not occurring. The NLDC anticipates continuing this yearly monitoring.

TAISP is currently pursuing management options for control of curly leaf pondweed in the MW Chain of Lakes. The NLDC, Towns of MW and BJ, and representatives from the MWLA actively collaborated on planning efforts to address the issue of curly leaf pondweed in the MW Chain of Lakes (a portion of the infestation is within the jurisdictional limits of BJ.) We received a WI-DNR AIS Early Detection and Response Grant (EDR) for the 2013 treatment of smaller, non-established populations and are pursuing an EDR grant for 2014 chemical treatment and professional scuba hand-harvesters. In 2014, the TAISP will continue hand-pulling smaller infestations and areas detected after the optimal treatment period.

On June 4, 2013, Schmidt's Aquatic Plant Control treated approximately 13.1 acres of curly leaf pondweed in Island Lake and the Island-Spider Channel with Aquathol K® (United Phosphorus, Inc). This treatment was successful due to increased concentration and increased exposure time (ideal weather conditions with little wind.) NLDC staff and MWLA volunteers monitored the post-treatment herbicide concentration through participation in an Army Corps of Engineers program. Water samples, water quality, and weather data were taken at pre-specified points and depths and sent to a laboratory for testing. This program yields a better understanding of herbicide concentrations in the water column over time, which will help TAISP successfully plan treatments in the future. In addition to the herbicide treatment, NLDC staff, volunteers, and Onterra LLC hand-pulled all smaller infestations in Spider, Stone, and Manitowish Lakes in 2013.

Purple Loosestrife Update

An intensive effort was made this year by NLDC to survey all shorelines on the entire chain of lakes, associated river sections, and river sections leading into/away from the chain for purple loosestrife. These surveys included the entire Manitowish Waters Chain of Lakes, Rice Creek from Big Lake to Island Lake; Manitowish River from County Highway H to Island Lake; Trout River from County Highway H to Wild Rice Lake; Manitowish River from Rest Lake Dam downstream to the Hwy 47/182 bridge in the town of Manitowish including Benson, Vance, and Sturgeon Lakes; Circle Lily, Statehouse, and Stepping Stones Lakes (lakes unconnected to the MW chain of lakes). As a result of this effort, uniform baseline data was garnered and numerous purple loosestrife populations were identified and mapped in 2013.

Purple loosestrife control methods were employed at both new and old sites. NLDC and dedicated volunteers raised and released bio-control beetles in larger, established infested areas. Purple loosestrife digging and potting occurred on May 17, 2013, with the assistance of the North Lakeland School 7th graders. On June 17, 2013, beetles were collected and placed on

potted plants at the NLDC and at the Rest Lake rearing cage. Bio-control beetles were released at purple loosestrife infestations on Rest Lake, Island Lake, Rice Creek, Wild Rice Lake, Stepping Stone Lakes, Highway W, Tenderfoot Nature Conservancy Preserve, Muskellunge Lake, and the Trout River. NLDC staff and dedicated volunteers pulled non-established, smaller populations and cut flower heads to slow the spread through seeds on all populations found during surveys on the MW Chain of Lakes as well as connected and unconnected waters.

Other Species

An intensive effort was made this year by NLDC to survey all shorelines on the entire chain of lakes, associated river sections, and river sections leading into/away from the chain for phragmites and Japanese knotweed. These surveys included the entire Manitowish Waters Chain of Lakes, Rice Creek from Big Lake to Island Lake; Manitowish River from County Highway H to Island Lake; Trout River from County Highway H to Wild Rice Lake; Manitowish River from Rest Lake Dam downstream to the Hwy 47/182 bridge in the town of Manitowish including Benson, Vance, and Sturgeon Lakes; Circle Lily, Statehouse, and Stepping Stones Lakes (lakes unconnected to the MW chain of lakes). As a result of this effort, uniform baseline data was garnered with populations identified and mapped in 2013. The NLDC collaborated with Ted Ritter to send phragmites samples from Circle Lily Lake, Alder Lake, and the Trout River between Alder and Manitowish Lakes to Madison for identification confirmation and possible genetic testing. The sample from the Trout River was confirmed as the invasive species of phragmites, the other samples were native phragmites.

Education

A comprehensive public education campaign was undertaken in 2013. In addition to programs offered through the NLDC (Appendix B), NLDC staff also gave presentations to chambers, libraries, lake associations, clubs, and schools. Education audiences included children and adults as well as formal and informal education methods. NLDC and MWLA educated the public about AIS through an educational booth at numerous local community events. NLDC provided regular AIS updates at MWLA board meetings and at the annual member meeting; and at town board meetings. A variety of media outlets were utilized to educate the public about AIS, such as newspapers, newsletters, radio, public announcements at local events, websites, blogs, and social media.

Acknowledgements

The TAISP would like to thank the Towns of Manitowish Waters and Boulder Junction, the Manitowish Waters Lakes Association, and the North Lakeland Discovery Center for all of their efforts and support in 2013. We look forward to working with the partnership in the future as AIS is a long-term issue with long-term solutions.

Appendix A. Fulfillment of Agreement Goals and Objectives:

Prevent AIS Infestations: Through Education (see Appendix A for all activities and trainings)

- Provided a multitude of opportunities for AIS education to all members of the public.
- Delivered youth AIS education as a part of the Discovery Center's *Eco-discoverers (Ages 4-7), Eco-explorers (Ages 7-10), and Eco-adventurers (Ages 11-14)* programs.
- Conducted a workshop to train volunteers on how to identify aquatic vegetation species and what fish and wildlife species each plant species benefits.
- Hosted Purple Loosestrife (PL) Program, trained and actively engaged volunteers in PL identification and control.
- Trained volunteers in Rusty Crayfish trapping methods and loaned volunteers crayfish traps.
- Trained AIS monitoring "Captains and Deckhands" for 2013 monitoring efforts through numerous hands-on pontoon trainings on the MW chain.
- Conducted spontaneous AIS trainings of walk-in visitors to the NLDC.
- Identified aquatic plants for walk-in visitors and 'Captain and Deckhand' volunteers who brought plant samples to the NLDC.
- Improved and maintained NLDC Nature Nook public AIS displays and activities through a Touch Tank, fish tank, interpretive signs, and additional informational displays.
- Educational outreach oral presentations at the Northwoods Seniors, Girl Scouts.
- Educational outreach booths at the community events such as MWLA Annual Meeting, Vilas County Lakes and Rivers Association Annual Meeting, 4th of July (MW), Musky Jamboree (BJ), and Colorama (MW) stressing AIS species found in area waters.
- Provided educational AIS booths and materials for inclusion in packets at fishing tournaments such as the Musky Classic in September and Winter Rendezvous Ice Fishing Tournament in February.
- Attended the Wisconsin Lakes Convention, April 8-11, 2013.

Prevent and Manage AIS Infestations: Through Lake Monitoring, Reporting, and Mapping

- Promoted volunteer monitoring in workshop trainings and through various communications (including website, blog, social media, NLDC newsletter, MWLA newsletter/ website, newspaper, flyers, and other), Wisconsin Invasive Species Council Calendar (ISAM), and the WDNR Citizen Lake Monitoring Network.
- Evaluated and expanded Lake "Captain and Deckhand" monitoring program.
- Provided training and monitoring materials to Lake 'Captains and Deckhands' including monitoring handbooks, waterproof field notebooks, crayfish traps, aquatic plant rakes, aquatic plant identification books (Aquatic Plants You Should Know; Through the Looking Glass; Aquatic Plants of the Upper Midwest).
- NLDC and volunteers identified and mapped AIS infestations.
- Surveyed all shorelines, litoral zone, and wetlands; targeting areas considered suitable for AIS (thus a higher likelihood of infestation/ establishment) on the entire MW chain of lakes, associated river sections, and river sections leading into/away from the chain for curly leaf pondweed, Eurasian water milfoil, purple loosestrife, Japanese knotweed, and phragmites by pontoon, fishing boat, canoe, and kayak. These surveys included the entire Manitowish Waters Chain of Lakes, Rice Creek from Big Lake to Island Lake; Manitowish River from

County Highway H to Island Lake; Trout River from County Highway H to Wild Rice Lake; Manitowish River from Rest Lake Dam downstream to the Hwy 47/182 bridge in the town of Manitowish including Benson, Vance, and Sturgeon Lakes; Circle Lily, Statehouse, and Stepping Stones Lakes (lakes unconnected to the MW chain of lakes). As a result of this intensive effort, uniform baseline data was garnered and numerous populations were identified in the chain in 2013. Anticipate conducting similar survey yearly in waters not being surveyed by Onterra, LLC.

- Identify previously undetected infestations of curly leaf pondweed in Stone and Manitowish Lakes and the Rest-Stone Channel with the assistance of volunteers; immediately report to interested parties.
- Monitor water quality with Hach® meter in infested and non-infested baseline locations as curly leaf pondweed was senescing in mid-summer to ensure that dissolved oxygen issues were not occurring.
- Collaborated with Ted Ritter to send phragmites samples from Circle Lily Lake, Alder Lake, and the Trout River between Alder and Manitowish Lakes to Madison for identification confirmation and possible genetic testing (October 2, 2013). The sample from the Trout River was as the invasive species of phragmites, the other samples were native phragmites.
- Collaborated with WDNR statewide Surface Water Integrated Monitoring System (SWIMS) database managers in Madison to update data entry screens.
- Entered AIS volunteer and NLDC staff data into the WDNR statewide SWIMS database.
- Provided assistance and guidance to TAISP and volunteers based on Onterra LLC and the WDNR determinations as they relate to MW Chain of Lakes curly leaf pondweed infestation.

Prevent AIS Infestations: Through Boat Landing Inspections

- Inspected boat landings on high-traffic weekends and tournaments (Musky Classic) through the Clean Boats, Clean Waters (CBCW) program.
- Provided training, guidance and materials for volunteers performing boat landing inspections.
- In 2013, NLDC staff and volunteers spent 200 hours conducting watercraft inspections and educating boaters at boat landings on the MW Chain per grant requirements/ statutes.
- Input all volunteer and staff boat landing inspection data into WDNR's statewide Surface Water Integrated Monitoring System (SWIMS).
- Evaluated the CBCW program for TAISP.

Prevent AIS Infestations: Through Communication and Public Relations

- Kept TAISP members informed of the materials and opportunities available through the NLDC public programs, website, AIS displays, and library.
- Provided for and collaborated on AIS-related educational report and activities at the MWLA board meetings and at the annual member meeting; and at town board meetings.
- The MWLA sponsored AIS half-time announcements at bi-weekly Skiing Skeeters water skiing shows on Rest Lake in Manitowish Waters.
- Supplied and updated AIS printed materials to both the MW and BJ Chambers of Commerce and Libraries throughout the season for distribution to visitors to the area.
- Designed and produced AIS materials such as pamphlets, flyers, posters, and backboard displays to supplement WDNR materials.

- In 2011, worked with the Town, MWLA, NHAL, and Vilas County Invasive Species Coordinator to ensure that WDNR-adopted signs were placed at appropriate boat landings and old signage was removed. In 2012, placed River Alliance AIS landing signs at all river put-in locations in area. In 2013, made sure all signage was in place, replacing as necessary.
- Designed and placed signs at MW chain public boat landings informing the public of the presence of curly leaf pondweed and importance of cleaning boats and equipment.
- Participate in WDNR Bait Shop Program and Ice Your Catch Initiative. Educated ice and bait vendors in the MW and BJ area, placing 'Ice Your Catch' posters at each vendor.
- Maintained and improved AIS outreach through the including website, press releases, public announcements, newspapers, radio, and photo database.
- Issued AIS features in MWLA and NLDC newsletters and websites.
- Issued an 'AIS of the Month' for each summer month, publicized through MWLA, NLDC, and Lake 'Captain and Deckhand' communications.
- Placed AIS banner on pontoon boat for visual education of MW boaters while monitoring and conducting AIS training.
- Improved NLDC public AIS displays, Nature Nook displays/activities, and on-site library.
- Designed and placed interpretive signs regarding AIS species at NLDC.
- Hosted volunteer appreciation reception dinner: rusty crayfish boil at NLDC.
- Serve on board of directors of the Vilas County Lakes and Rivers Association (VCLRA). NLDC assisted with judging of the VCLRA Blue Heron Lake Shoreline Stewardship Awards which recognize lake property owners who are conscientious in the development and use of their waterfront property to minimize environmental impacts. NLDC also submitted articles to the VCLRA newsletter.

Manage AIS Infestations: Through an Action Plan for Containing Purple Loosestrife Infestation

- Supported the Town and the MWLA in implementation of an action plan for containing purple loosestrife infestations.
- Hosted purple loosestrife workshops, educating and training the public and volunteers about identification, issues, and efforts they can employ to control purple loosestrife.
- Surveyed all shorelines on the entire MW chain of lakes, associated river sections, and river sections leading into/away from the chain for purple loosestrife (July 25, August 7, 9, 12, 13, 15, 16, 23, 27, 28, 29, 31.) These surveys included the entire Manitowish Waters Chain of Lakes, Rice Creek from Big Lake to Island Lake; Manitowish River from County Highway H to Island Lake; Trout River from County Highway H to Wild Rice Lake; Manitowish River from Rest Lake Dam downstream to the Hwy 47/182 bridge in the town of Manitowish including Benson, Vance, and Sturgeon Lakes; Circle Lily, Statehouse, and Stepping Stones Lakes (lakes unconnected to the MW chain of lakes). As a result of this intensive effort, uniform baseline data was garnered and numerous populations were identified.
- Updated statewide GPS inventory of purple loosestrife infestation sites in MW and surrounding area.
- Coordinated and deployed purple loosestrife control methods at new and old infestations.
- The NLDC and dedicated volunteers raised and released bio-control beetles in larger, established infested areas. Purple loosestrife digging and potting (~75 pots) occurred on May 17 with the help of the North Lakeland School 7th graders. On June 17, beetles were

collected and placed on potted plants at the NLDC and at the Rest Lake rearing cage. Bio-control beetles were released at purple loosestrife infestations on Rest Lake, Island Lake, Rice Creek, Wild Rice Lake, Stepping Stone Lakes, Highway W, Tenderfoot Nature Conservancy Preserve, Muskellunge Lake, and the Trout River (July 8, 9, 10, 12, 17, 24, 30, August 2, 10, 2013.)

- The NLDC and dedicated volunteers pulled non-established, smaller populations and cut flower heads on all populations found during surveys on the MW Chain of Lakes as well as connected and unconnected waters in order to prevent the potential spread through seeds (July 25, August 7, 9, 12, 13, 15, 16, 23, 27, 28, 29, 31.)

Manage AIS Infestations: Through a Plan and Options for Addressing Curly Leaf Pondweed Infestation in Manitowish Waters Chain

- Assisted the Towns of MW/ BJ, and MWLA as a technical advisor in lake management planning for AIS species with an emphasis on curly leaf pondweed. Obtain WDNR AEPP and EDR grants, assisting in grant writing, project planning, tracking, and reporting.
- Actively engaged partners to encourage collaboration on the issue of curly leaf pondweed.
- Identified, monitored, and mapped locations of curly leaf pondweed in the chain stressing early detection (by volunteers and NLDC) of AIS for the most effective, efficient, and cost-effective control.
- Surveyed the entire chain of lakes, associated river sections, river sections leading into/away from the chain, and selected unconnected lakes in the Manitowish Waters area for curly leaf pondweed (June 7, 12, 18, 24, July 24, 25, 2013). These surveys included the entire Manitowish Waters Chain of Lakes, Rice Creek from Big Lake to Island Lake; Manitowish River from County Highway H to Island Lake; Trout River from County Highway H to Wild Rice Lake; Manitowish River from Rest Lake Dam downstream to the Hwy 47/182 bridge in the town of Manitowish including Benson, Vance, and Sturgeon Lakes; Circle Lily, Statehouse, and Stepping Stones Lakes (lakes unconnected to the MW chain of lakes). Additional areas of infestation were found in Stone, Spider, and Manitowish Lakes and the Rest-Stone Channel. We anticipate conducting a similar survey yearly in waters not being surveyed by Onterra, LLC.
- NLDC staff monitored the water quality in infested locations and non-infested baseline locations as the plant was senescing in mid-summer to ensure that dissolved oxygen issues were not occurring (July 20, 24, 31, August 16, 2013.)
- Communicated with WDNR recreational officers, MW safety patrol officers, Vilas County water sheriffs, WDNR water LEOs regarding curly leaf pondweed infestation in relation to boaters cleaning their boats and equipment.
- On June 4, 2013, Schmidt's Aquatic Plant Control treated approximately 13.1 acres of curly leaf pondweed in Island Lake and the Island-Spider Channel with Aquathol K® (United Phosphorus, Inc). This treatment was successful due to increased concentration and increased exposure time (ideal weather conditions with little wind.)
- NLDC staff and MWLA volunteers monitored the post-treatment herbicide concentration through participation in an Army Corps of Engineers program. Water samples, water quality, and weather data were taken at pre-specified points and depths and sent to a laboratory for testing (June 4-12, 2013.) This program yields a better understanding of herbicide concentrations in the water column over time, which will help TAISP successfully plan treatments in the future.

- In addition to the herbicide treatment, NLDC staff and volunteers hand-pulled all smaller infestations in Spider, Stone, and Manitowish Lakes and the Rest-Stone Channel (June 24, 25, 26, 27, July 3, 5, 2013) which were detected after the optimal treatment time. In 2014, the TAISP will continue hand-pulling smaller infestations and areas detected after the optimal treatment period.
- The TAISP is pursuing the use of professional scuba hand-harvesters in 2014 to assist in hand-pulling smaller infestations and areas detected after the optimal treatment period.
- Water Education Intern conducted school project for UW-Stevens Point credit on curly leaf pondweed impacts on aquatic vegetation species in Rice Creek (July 16-20, 24-26, 30-31, August 1-2, 6, 12, 14, 20, 28, 30, 2013.) A. Kretschmann and professor meet to discuss project on August 19, 2013.

Administer Efficiently and Effectively: Through Strategic Planning and Grant Administration

- Continued working with the TAISP on management recommendations for the MW Chain of Lakes planning documents through strategic planning meetings.
- Administer grants and track volunteer hours.

Appendix B. Aquatic Invasive Species (AIS) Educational Outreach through the North Lakeland Discovery Center Programs: Hosted or AIS Incorporated, by date, 2013.

January 10, August 15, 2013
Trivia Night Nibbles n' Knowledge Program- Test your knowledge on topics related to nature, the Northwoods, and the Discovery Center. Prizes awarded to individuals and teams in a variety of categories. An evening of delicious nibbles and expanding your knowledge. (*including lakes and invasive species.)

February 12, 2013
Film Showing and Discussion: Lords of Nature- Delve into this complex issue by showing the film "Lords of Nature" which highlights the drastic effects species can have on an entire ecosystem. Facilitated discussion.

February 16, 2013
Winter Rendezvous Ice Fishing Tournament, Manitowish Waters Chain of Lakes. AIS educational booth and AIS materials stuffed in tournament packets.

February 19, 2013
Film Showing and Discussion: Silent Spring- Celebrate great environmental films. This fascinating documentary highlights Rachel Carson's poetic and seminal work "Silent Spring." The book was widely credited with spurring the movement questioning pesticides in our environment, and Carson's personal story is equally poignant. Facilitated discussion follows.

February 26, 2013
Film Showing and Discussion: An Inconvenient Truth- "With the fate of our planet arguably hanging in the balance, 'An Inconvenient Truth' may prove to be one of the most important and prescient documentaries of all time." Facilitated discussion follows.

February 26, 2013
Vilas County WHIP meeting participant, Eagle River, WI.

March 5, 12, 19, 2013
Leopold's Legacy; Part 1: Greenfire Film Showing and Discussion; Part 2: The Land Ethic; Part 3: Ethics in Action- Aldo Leopold's legacy continues through his articulation of a "land ethic," or the ideas that as humans we have a moral responsibility to the natural world.

March 11, 2013
WDNR AIS Research and Treatment regional meeting participant, Rhinelander, WI.

April 8, June 14, July 23, October 8, 2013
Vilas County Lakes and Rivers Association Board Meetings participant.

April 8-11, 2013
Wisconsin Lakes Convention, Green Bay, WI.

April 16, 17, 18, 2013
Land Management Workshop; Part 1: Wildlife; Part 2: Woods; Part 3: Water- Responsible land management is a concern of many land owners. In this three part series we discuss the balance of ecological and human needs on your property and how some simple management strategies will help you achieve short- and long-term goals for your property.

May 1, 15, 2013
Weeds and wildflowers walk- Head out on the trails and see what's blooming! We will identify the common weeds and wildflowers we see along the way.

May 14, 20, June 17, July 8, August 12, September 16, 2013
MWLA Board Meetings, TAISP/ AIS update presentation.

May 17, 2013
Purple loosestrife digging, potting, and netting of plants with students from North Lakeland School for bio-control beetle project.

May 29, 2013
NLDC staff and volunteers attend Clean Boats Clean Waters training in Eagle River, WI.

June 4, 2013
Herbicide treatment of Island Lake and Spider-Island Channel.

June 4-12, 2013
Herbicide concentration monitoring of treatment areas in Island Lake and Spider-Island Channel.

June 7, 2013
Transplant purple loosestrife and put net on beetle rearing cage at Rest Lake infestation site.

June 7, 12, 18, 24, July 24, 25, 2013
Curly leaf pondweed monitoring.

June 8, 2013
Aquatic invasive species (AIS) are among the greatest threats to the health of our northern lakes. After completing this ‘Lake Captain’ training, you will be able to identify the common culprits and conduct monitoring surveys to protect your local lake. Good for first time volunteers or as a refresher for our seasoned veterans! We will travel by boat to local infestations, dress appropriately. An array of tools and resources are available for free or loan to interested volunteers. Meet at Koller Park.

June 11, 2013
Center for Conservation Leadership, IL- canoe Manitowish River from Rest Lake Dam to wayside on Hwy 51 learning about river ecology, native and non-native species.

June 11, 2013
Invader Crusader Award Ceremony, Madison, WI.

June 12, 2013
Benson Lake ‘Captain’ Training and Monitoring.

June 13, 2013
Center for Conservation Leadership, IL- Lessons on water quality, lake level, shoreline buffers, aquatic invasive species, macroinvertebrates, and loon ecology.

June 14, 2013
Vilas County Lakes and Rivers Association- Annual Meeting, Land o Lakes, WI. Aquatic Invasive Species and Lake Level Monitoring educational booth.

June 15-16, 2013
Clean Boats, Clean Waters: Landing Blitz- Icepack Giveaway.

June 15, 22, July 6, 13, 20, 27, August 3, 10, 16, 23, 30, September 6, 13, 20, 27
Guided Interpretive Hike- Discover the sights and sounds of the great outdoors with a guided hike on our interpretive trails. The trail winds among pines, hardwoods, a bog and even up a tree fort! Learn about our local plant and wildlife communities while you enjoy the beauty of the Northwoods. (*including invasive species.)

June 17, 2013
Transplant purple loosestrife in pots at NLDC and in Rest Lake beetle rearing cage.

June 17, 2013
Purple Loosestrife Beetle Collection at Big Muskellunge Lake.

June 18; July 16; and August 13, 2013
Third-Tuesday Tours ‘Deckhand’ Aquatic Invasive Species Training- Citizen Science Training- For those who want to help with aquatic invasive species (AIS) monitoring but can’t make a big time commitment, becoming a ‘Deckhand’ is just for you! Meet at Koller Park in Manitowish Waters and travel by pontoon through the chain searching for native and invasive aquatic plant species. An array of tools and resources are available for free or loan to interested volunteers.

June 19, 2013
Invasive Species Education Summit, Eagle River, WI.

June 20, 2013
Aquatic Vegetation Workshop- Join us to explore the underwater plant world of the Northwoods! Bring in samples and learn to identify common aquatic plants and find out what fish and wildlife species they benefit through a workshop followed by an optional scenic afternoon pontoon ride! Collaborating presenter: Ted Ritter, Vilas County Invasive Species Coordinator. Sponsored by the Winchester Town Lakes Committee, complimentary picnic lunch provided.

June 24, 25, 26, 27, July 3, 5, 2013
Hand-pull curly leaf pondweed in Spider, Stone, and Manitowish Lakes and Rest-Stone Channel.

July 8, 9, 10, 12, 17, 24, 30, August 2, 10, 2013
Release purple loosestrife bio-control beetles.

July 25, August 7, 9, 12, 13, 15, 16, 23, 27, 28, 29, 31
Purple loosestrife, Japanese knotweed, phragmites, and Eurasion water milfoil monitoring. Clip purple loosestrife flowerheads.

June 26, 2013
Purple Loosestrife Workshop- Pretty purple flower or ecologically and economically threatening invasive species? Learn about the unique life-cycle and the process involved with raising your own 'Cella Chow' bio-control beetles.

July 1, 2013
Member Appreciation Dinner- Join us for an evening just for Discovery Center members! Enjoy complimentary food and beverages, as well as pontoon and canoe rides, kids crafts, games and more. This is a great time to share your ideas and feedback and to learn of past accomplishments and future plans, including the E-Pod Experience, Master Plan and more!

July 4, 2013
Manitowish Waters Community Celebration- 4th of July Aquatic Invasive Species educational booth.

July 12, 2013
Rest Lake Kayak Drop-in Paddle- The Discovery Center will be offering weekly drop-in silent sport activities Fridays throughout the summer and fall seasons. This week's activity will be a lake and back-bay exploration paddle on Rest Lake in Manitowish Waters, departing from Rest Lake Park. All ages and ability levels welcome. (*including aquatic vegetation.)

July 16, 30; August 13, 27, September 10, 2013
Rest Lake Discovery Pontoon Tours- The Manitowish Chain of Ten Lakes is legendary for its unique historical and ecological stories. Join your guide for a tour of the biggest lake in the chain and learn about the common plant and wildlife species. Sightings of loons and eagles are common. Meet at Kohler Park. (*including changes in ecology from invasive species).

July 16-20, 24-26, 30-31, August 1-2, 6, 12, 14, 20, 28, 30, 2013
Water Education Intern conducted school project for UW-Stevens Point credit on curly leaf pondweed impacts on aquatic vegetation species in Rice Creek. A. Kretschmann and professor meet to discuss project on August 19, 2013.

July 20, 24, 31, August 16, 2013
Curly leaf pondweed senescing monitoring and water quality data monitoring in Island Lake, Rice Creek, and Rest-Stone Channel.

July 23, 2013
Tuesday Discovery Programs: Fishy Business!- A variety of topics throughout the summer on favorite Northwoods topics. Great for all ages! Have you always wondered about that fish

swimming under your dock or why it keeps hanging around? Learn how to identify common fish and their habitat preferences. (* includes lake habitat, ecology, and invasive species impacts.)

July 25, 2013
Traveling Naturalist: Medicinal Wild Edibles- Hear about 'herbal lore' and natural botanical medicines. Learn how to identify, collect, prepare, and use common traditional healing plants found in the Northwoods. (*including Purple Loosestrife.)

July 26, August 2, 23, September 28
Manitowish River Canoe Trips- Travel down the historic Manitowish River by canoe. We'll begin in the classroom with a brief river ecology program before heading out on the water. The paddle will be approximately 3 miles.

July 27, 2013
Manitowish Waters Lake Association Annual Meeting- Aquatic Invasive Species educational booth and Dan Cibulka (Onterra, LLC) guest speaker.

July 30, 2013
Tuesday Discovery Programs: Northwoods Lakes- A variety of topics throughout the summer on favorite Northwoods topics. Great for all ages! There are more than 7000 lakes in the Lakeland area. Learn why they are different, what threats they face and how we can be good stewards for them. Tim Kratz, UW Trout Lake Limnologist.

August 2, 2013
NLDC water staff attends Trout Lake Research Station Open House to learn about new/ongoing water-related and AIS research/findings.

August 2, 2013
Rusty crayfish trapping training.

WATER WEEK
August 6, 2013
Eco-discoverers (Ages 4-7): Alien Invaders- Explore and learn about aliens in our lakes! See animals and explore non-native plant species. We'll read 'Up North at the Cabin' and pair our learning with activities, hikes, and crafts. Cost partially underwritten by Presque Isle Lakes Committee.

August 6, 2013
Tuesday Discovery Programs: Fish Sticks Woody Habitat Restoration- A variety of topics throughout the summer on favorite Northwoods topics. Great for all ages! The Fish Sticks Habitat Project is helping to place wood on the shores of willing landowners. Learn how this technique is done and get the latest updates on the project. Scott Toshner, Water Resource Specialist & Fisheries Biologist, WDNR.

August 7, 2013
Eco-Explorers (Ages 7-10)- Eco-Series for youth goes beyond outdoor playtime and builds a framework of appreciation and stewardship based on Aldo Leopold's land ethic. Each week's theme is based on a chapter out of Leopold's writings and we use age-appropriate activities explore our connections to nature and the land around us. Theme Chapter: The Alder Fork- Learn the importance of one of our natural resources, water. We will learn about the battle against AIS. Older groups will go fishing. Visit the bog, other types of wetlands.

August 8, 2013
Eco-Adventurers (Age 11-14)- Eco-Series for youth goes beyond outdoor playtime and builds a framework of appreciation and stewardship based on Aldo Leopold's land ethic. Each week's theme is based on a chapter out of Leopold's writings and we use age-appropriate activities explore our connections to nature and the land around us. Theme Chapter: The Alder Fork- Learn the importance of one of our natural resources, water. We will learn about the battle against AIS. Older groups will go fishing. Visit the bog, other types of wetlands. (*includes paddle for invasive species.)

August 8, 2013
Beware Invaders in our Waters!- Learn about aquatic invasive species of the Northwoods: identification, control, and their ecological and economic impacts. Hear about the latest findings from researchers and what YOU can do! An array of tools and resources are available for free or loan to interested volunteers.

August 8, 2013
Lake Expert Pontoon Tour- Join Carolyn Scholl, Vilas County Conservationist, on a pontoon tour of the Chain of Lakes. Carolyn will talk about all the puzzle pieces that make up a healthy lake ecosystem, including how shoreline buffers can benefit lake water quality! Meet at Koller Park in Manitowish Waters.

August 8, 2013
Northwoods Seniors- Aquatic Invasive Species of the Northwoods presentation.

August 11, 2013
Boulder Junction Musky Day Jamboree- Aquatic Invasive Species educational booth.

August 14, 2014
Eco-Explorers (Ages 7-10)- Eco-Series for youth goes beyond outdoor playtime and builds a framework of appreciation and stewardship based on Aldo Leopold's land ethic. Each week's theme is based on a chapter out of Leopold's writings and we use age-appropriate activities explore our connections to nature and the land around us. Theme Chapter: Great Possessions. Become a nature scientist for a day by observing, conducting research and collecting data. (*includes collecting lake and water quality data.)

August 15, 2013
Intern Presentations at NLDC Board Meeting.

August 21-22, 2013
Crayfish trapping survey and collection.

August 22, 2013
If You Can't Beat 'em, Eat 'em!: Volunteer and Supporter Appreciation Dinner Rusty Crayfish Boil- Volunteers and supporters are vital to the success of our mission. We want to thank you for giving of your time and talents! Join us for a feast of alien proportions when we harvest the invasive species, rusty crayfish, from area lakes.

September 6-8, 2013
Musky Classic AIS Informational Booth- Provide tournament fishermen with AIS information/ educational materials.

September 6, 2013
Circle Lily Lake: Hike and Paddle Drop-In- 3 mile hike on Discovery Center trails to Circle Lily Lake for a relaxing paddle.

September 16, 2013
Open House 'Discovery Event'- Discover NLDC programs and their impacts on the community and the natural world. (*includes AIS program.)

September 16, 2013
Vilas County Lakes and Rivers Association Blue Heron Shoreline Stewardship Awards assist with property assessments.

September 18, 2013
Vilas County Lakes and Rivers Association Homebuyers Initiative Meeting participant.

September 20, October 11, 2013
Gresham Creek and Lakes Drop-In Paddle- Paddle on Gresham Creek and Lakes in Boulder Junction, WI.

September 21, 2013
Manitowish Waters' Cranberry Colorama- Aquatic Invasive Species educational booth.

September 27, 2013
Fall Social- Connect with fellow members, staff and the broader community. Join us to explore the Discovery Center's master plan "Beyond Boundaries: Creating a Natural Destination for Discovery." Learn about ways the plan is being brought to life through the development of the "E-Pod Experience," and provide input on plans for the future. (* E-pods include focus on water/ lakes/ invasive species.)

October 2, 2013
Phragmites sampling/ survey with Ted Ritter, Vilas County AIS Coordinator.

October 14, 2013
WDNR Northern Region AIS Fall Wrap-up Meeting, Rhinelander, WI.

October 21, 2013
Lake Management Planning Meeting with Onterra and stakeholders.

November 8, 2013
Girl Scouts of America- AIS presentation.

November 19, 2013
EPA- Water Resources: Re-engaging your volunteer monitoring organization webinar participant.

B

APPENDIX B

Stakeholder Survey Response Charts and Comments

Stakeholder Survey materials will be included here once completed (Phase II)

C

APPENDIX C

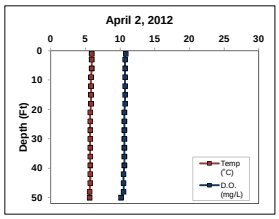
Water Quality Data

Rest Lake

Date: 4/2/2012
Time: 12:38
Weather: 90% sun, windy, 48°F
Entry: TWH

Max Depth: 50.9
RLS Depth (ft): 3.0
RLB Depth (ft): 48.0
Secchi Depth (ft): 8.6

Depth (ft)	Temp (°C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	5.9	10.8	8.5	100.0
3	5.9	10.7	8.4	99.0
6	5.9	10.7	8.4	99.0
9	5.8	10.7	8.4	100.0
12	5.8	10.7	8.3	99.0
15	5.8	10.7	8.3	99.0
18	5.8	10.7	8.3	100.0
21	5.7	10.6	8.3	100.0
24	5.7	10.6	8.3	100.0
27	5.7	10.6	8.3	99.0
30	5.7	10.6	8.3	100.0
33	5.7	10.6	8.3	100.0
36	5.7	10.6	8.3	100.0
39	5.7	10.6	8.3	100.0
42	5.7	10.5	8.3	100.0
45	5.7	10.5	8.3	100.0
48	5.6	10.5	8.3	100.0
50	5.6	10.1	8.3	100.0



Parameter	RLS	RLB
Total P (µg/L)	16.00	17.00
Dissolved P (µg/L)	ND	ND
Chl-a (µg/L)	3.02	NA
TKN (µg/L)	ND	300.00
$NO_3 + NO_2$-N (µg/L)	144.00	147.00
NH_3-N (µg/L)	ND	624.00
Total N (µg/L)	144.00	447.00
Lab Cond. (µS/cm)	114.00	114.00
Lab pH	7.65	7.73
Alkalinity (mg/L $CaCO_3$)	47.30	48.30
Total Susp. Solids (mg/L)	NA	NA
Calcium (mg/L)	14.20	NA
Magnesium (mg/L)	NA	NA
Hardness (mg/L)	NA	NA
Color (SU)	NA	NA
Turbidity (NTU)	NA	NA

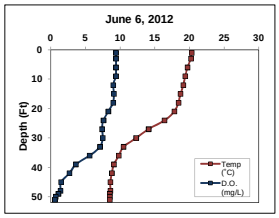
Data collected by TWH (Onterra)

Rest Lake

Date: 6/6/2012
Time: 9:20
Weather: 80% sun, light breeze, 70°F
Entry: TWH

Max Depth: 52.3
RLS Depth (ft): 3.0
RLB Depth (ft): 49.0
Secchi Depth (ft): 11.5

Depth (ft)	Temp (°C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	20.3	9.4		
3	20.2	9.4		
6	19.7	9.4		
9	19.4	9.4		
12	19.1	9.0		
15	18.7	9.1		
18	18.4	9.0		
21	17.8	8.3		
24	16.4	7.6		
27	14.1	7.4		
30	12.3	7.5		
33	10.5	7.1		
36	9.8	5.6		
39	9.1	3.6		
42	8.8	2.7		
45	8.6	1.5		
48	8.6	1.4		
49	8.5	1.1		
50	8.5	0.7		
51	8.5	0.6		



Parameter	RLS	RLB
Total P (µg/L)	10.00	33.00
Dissolved P (µg/L)	NA	NA
Chl-a (µg/L)	2.05	NA
TKN (µg/L)	NA	NA
$NO_3 + NO_2$-N (µg/L)	NA	NA
NH_3-N (µg/L)	NA	NA
Total N (µg/L)	NA	NA
Lab Cond. (µS/cm)	NA	NA
Lab pH	NA	NA
Alkalinity (mg/L $CaCO_3$)	NA	NA
Total Susp. Solids (mg/L)	NA	NA
Calcium (mg/L)	NA	NA
Magnesium (mg/L)	NA	NA
Hardness (mg/L)	NA	NA
Color (SU)	NA	NA
Turbidity (NTU)	NA	NA

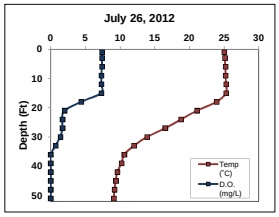
Data collected by TWH and EJG (Onterra)

Rest Lake

Date: 7/26/2012
Time: 11:00
Weather: Overcast, 62F, light drizzle
Entry: EEC

Max Depth: 52.1
RLS Depth (ft): 3.0
RLB Depth (ft): 50.0
Secchi Depth (ft): 8.8

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	25.0	7.4	7.2	
3	25.1	7.4	7.2	
6	25.2	7.4	7.5	
9	25.2	7.3	7.6	
12	25.3	7.3	7.6	
15	25.3	7.3	7.6	
18	23.9	4.4	7.5	
21	21.1	2.0	7.4	
24	18.8	1.7	7.3	
27	16.5	1.7	7.3	
30	13.9	1.4	7.2	
33	12.0	0.7	7.2	
36	10.6	0.0	7.2	
39	10.2	0.0	7.1	
42	9.6	0.0	7.0	
45	9.4	0.0	7.0	
48	9.2	0.0	6.9	
51	9.1	0.0	6.9	



Parameter	RLS	RLB
Total P (µg/L)	14.00	105.00
Dissolved P (µg/L)	ND	71.00
Chl-a (µg/L)	2.08	NA
TKN (µg/L)	330.00	1020.00
$NO_3 + NO_2$-N (µg/L)	ND	ND
NH_3-N (µg/L)	ND	ND
Total N (µg/L)	330.00	1020.00
Lab Cond. (µS/cm)	106.00	131.00
Lab pH	7.96	7.13
Alkalinity (mg/L $CaCO_3$)	47.00	62.00
Total Susp. Solids (mg/L)	NA	NA
Calcium (mg/L)	12.70	NA
Magnesium (mg/L)	NA	NA
Hardness (mg/L)	NA	NA
Color (SU)	NA	NA
Turbidity (NTU)	NA	NA

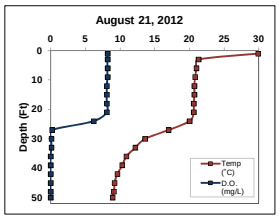
Data collected by BTB (Onterra)

Rest Lake

Date: 8/21/2012
Time: 11:00
Weather: 10% clouds, 70F, light breeze
Entry: EEC

Max Depth: 50.8
RLS Depth (ft): 3
RLB Depth (ft): 48
Secchi Depth (ft): 11.2

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	29.9	8.2		
3	21.3	8.2		
6	21	8.2		
9	20.8	8.2		
12	20.7	8.1		
15	20.7	8.1		
18	20.6	8.1		
21	20.6	8.1		
24	20	6.2		
27	17	0.2		
30	13.6	0.1		
33	12.2	0.1		
36	10.9	0		
39	10.3	0		
42	9.6	0		
45	9.2	0		
48	9.1	0		
50	8.9	0		



Parameter	RLS	RLB
Total P (µg/L)	19	219
Dissolved P (µg/L)	NA	NA
Chl-a (µg/L)	2.67	NA
TKN (µg/L)	NA	NA
$NO_3 + NO_2$-N (µg/L)	NA	NA
NH_3-N (µg/L)	NA	NA
Total N (µg/L)	NA	NA
Lab Cond. (µS/cm)	NA	NA
Lab pH	NA	NA
Alkalinity (mg/L $CaCO_3$)	NA	NA
Total Susp. Solids (mg/L)	NA	NA
Calcium (mg/L)	NA	NA
Magnesium (mg/L)	NA	NA
Hardness (mg/L)	NA	NA
Color (SU)	NA	NA
Turbidity (NTU)	NA	NA

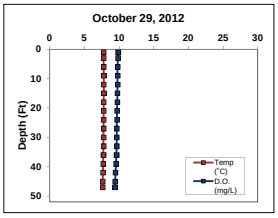
Data collected by TAH (Onterra), MJH and MKH

Rest Lake

Date: 10/29/2012
Time: 9:15
Weather: 15% clouds, 32F, windy, cold
Entry: EEC

Max Depth: 49.6
RLS Depth (ft): 3
RLB Depth (ft): 47
Secchi Depth (ft): 8.2

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	7.75	9.86	8.75	98
3	7.78	9.84	8.75	98
6	7.77	9.8	8.76	98
9	7.79	9.79	8.76	97.8
12	7.78	9.79	8.76	98
15	7.79	9.76	8.76	97.8
18	7.77	9.75	8.76	98
21	7.77	9.71	8.76	98
24	7.77	9.7	8.76	98
27	7.77	9.67	8.76	98
30	7.77	9.66	8.76	98
33	7.76	9.65	8.75	98
36	7.74	9.63	8.75	98
39	7.71	9.55	8.75	98
42	7.68	9.47	8.73	98
45	7.64	9.43	8.71	98
47	7.62	9.4	8.71	98



Parameter	RLS	RLB
Total P (µg/L)	21.00	22.00
Dissolved P (µg/L)	NA	NA
Chl-a (µg/L)	5.10	NA
TKN (µg/L)	NA	NA
NO_3 + NO_2-N (µg/L)	NA	NA
NH_3-N (µg/L)	NA	NA
Total N (µg/L)	NA	NA
Lab Cond. (µS/cm)	NA	NA
Lab pH	NA	NA
Alkalinity (mg/L $CaCO_3$)	NA	NA
Total Susp. Solids (mg/L)	2.00	2.00
Calcium (mg/L)	NA	NA
Magnesium (mg/L)	NA	NA
Hardness (mg/L)	NA	NA
Color (SU)	NA	NA
Turbidity (NTU)	NA	NA

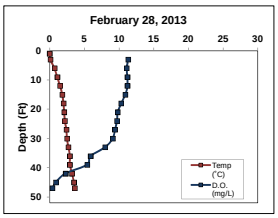
Data collected by EJG (Onterra)

Rest Lake

Date: 2/18/2013
Time: 9:46
Weather: 100% clouds, breezy, 10°F
Entry: TWH

Max Depth: 48.5
RLS Depth (ft): 3
RLB Depth (ft): 45
Secchi Depth (ft): 8.6

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	0			
3	0.1	11.3		
6	0.7	11.1		
9	1.1	11.2		
12	1.5	11.2		
15	1.8	10.9		
18	2	10.3		
21	2.1	9.8		
24	2.2	9.7		
27	2.4	9.4		
30	2.5	9.1		
33	2.7	8		
36	2.9	5.9		
39	2.9	5.4		
42	3.2	2.3		
45	3.5	0.9		
47	3.6	0.4		



Parameter	RLS	RLB
Total P (µg/L)	**17.00**	**23.00**
Dissolved P (µg/L)	2.00	9.00
Chl-a (µg/L)	NA	NA
TKN (µg/L)	460.00	730.00
NO_3 + NO_2-N (µg/L)	67.00	304.00
NH_3-N (µg/L)	40.00	132.00
Total N (µg/L)	NA	NA
Lab Cond. (µS/cm)	NA	NA
Lab pH	NA	NA
Alkalinity (mg/L $CaCO_3$)	NA	NA
Total Susp. Solids (mg/L)	NA	NA
Calcium (mg/L)	NA	NA
Magnesium (mg/L)	NA	NA
Hardness (mg/L)	NA	NA
Color (SU)	NA	NA
Turbidity (NTU)	NA	NA

Data collected by TWH and EJG (Onterra) Ice thickness: 1.4'

Water Quality Data

2012-2013	Surface		Bottom	
Parameter	Count	Mean	Count	Mean
Secchi Depth (feet)	6	9.5	NA	NA
Total P (µg/L)	6	16.2	6	69.8
Dissolved P (µg/L)	3	2.0	3	40.0
Chl a (µg/L)	5	3.0	0	NA
TKN (µg/L	3	395.0	3	683.3
NO3+NO2-N (µg/L)	3	105.5	3	225.5
NH3-N (µg/L)	3	40.0	3	378.0
Total N (µg/L)	2	237.0	2	733.5
Lab Cond. (µS/cm)	2	110.0	2	122.5
Lab pH	2	7.8	2	7.4
Alkal (mg/l CaCO3)	2	47.2	2	55.2
Total Susp. Solids (mg/l)	1	2.0	1	2.0
Calcium (µg/L)	2	13.5	0	NA
Magnesium (mg/L)	0	NA	0	NA
Hardness (mg/L)	0	NA	0	NA
Color (SU)	0	NA	0	NA
Turbidity (NTU)	0	NA	0	NA

Morphological / Geographical Data

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

Watershed Data

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

Trophic State Index (TSI)

Year	TP	Chl-a	Secchi
1984		46.4	
1985			
1992			44.7
1994			
1995			43.0
1996			44.8
1997			42.9
1998			42.7
1999			41.3
2001			
2002			44.9
2003			43.2
2004			43.4
2006			44.7
2007	40.0	45.0	
2011			46.3
2012	42.5	38.6	43.2
All Years (Weighted)	41.9	40.6	43.7
Deep, Lowland Drainage Lakes	49.4	49.7	46.2
NLF Ecoregion	48.1	47.5	45.7

	Secchi (feet)				Chlorophyll-a (µg/L)				Total Phosphorus (µg/L)			
	Growing Season		Summer		Growing Season		Summer		Growing Season		Summer	
Year	Count	Mean	Count	Mean	Count	Mean	Count	Mean	Count	Mean	Count	Mean
1984					1	5.0	1	5.0				
1985									1	13.0		
1992	3	8.5	1	9.5								
1994	1	10.5	0									
1995	6	11.1	3	10.7								
1996	12	9.7	9	9.4								
1997	9	10.7	9	10.7								
1998	5	11.4	3	10.9								
1999	2	12.0	2	12.0								
2001	1	10.5	0									
2002	4	10.4	3	9.4								
2003	3	10.5	3	10.5								
2004	2	10.4	2	10.4								
2006	2	9.5	2	9.5								
2007					1	4.3	1	4.3	1	12.0	1	12.0
2011	4	7.3	3	8.5								
2012	6	8.7	3	10.5	5	3.0	3	2.3	5	16.0	3	14.3
All Years (Weighted)		10.0		10.1		3.2		2.8		15.3		13.8
Deep, Lowland Drainage Lakes				8.5				7.0				23.0
NLF Ecoregion				8.9				5.6				21.0

July 2012 N: 330.0

July 2012 P: 14.0

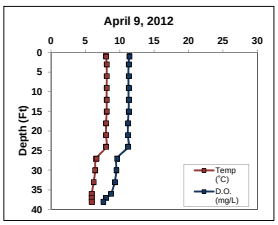
Summer 2012 N:P 24 :1

Spider Lake

Date: 4/9/2012
Time: 13:30
Weather: 100% clouds, sprinkles and flurries
Entry: TWH

Max Depth: 40.2
SLS Depth (ft): 3.0
SLB Depth (ft): 37.0
Secchi Depth (ft): 8.4

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	8.0	11.4	8.8	97.0
3	8.1	11.3	8.7	97.0
6	8.1	11.3	8.7	97.0
9	8.1	11.3	8.7	97.0
12	8.1	11.3	8.7	97.0
15	8.1	11.3	8.7	97.0
18	8.0	11.2	8.7	97.0
21	8.0	11.2	8.7	97.0
24	8.0	11.2	8.7	97.0
27	6.6	9.6	8.6	98.0
30	6.4	9.5	8.5	98.0
33	6.2	9.3	8.5	98.0
36	5.9	8.7	8.4	98.0
37	5.9	8.0	8.3	98.0
38	5.9	7.6	8.3	99.0



Parameter	SLS	SLB
Total P (µg/L)	17.00	19.00
Dissolved P (µg/L)	ND	ND
Chl-a (µg/L)	4.31	NA
TKN (µg/L)	350.00	470.00
$NO_3 + NO_2$-N (µg/L)	116.00	142.00
NH_3-N (µg/L)	ND	953.00
Total N (µg/L)	466.00	612.00
Lab Cond. (µS/cm)	113.00	119.00
Lab pH	7.90	7.47
Alkalinity (mg/L $CaCO_3$)	47.70	48.60
Total Susp. Solids (mg/L)	2.00	ND
Calcium (mg/L)	12.90	NA
Magnesium (mg/L)	3.40	NA
Hardness (mg/L)	46.20	NA
Color (SU)	15.00	NA
Turbidity (NTU)	NA	NA

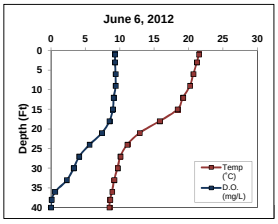
Data collected by TWH (Onterra)

Spider Lake

Date: 6/6/2012
Time: 10:35
Weather: 20% clouds, light breeze, 72˚F
Entry: TWH

Max Depth: 41.3
SLS Depth (ft): 3.0
SLB Depth (ft): 38.0
Secchi Depth (ft): 11.8

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	21.5	9.3		
3	21.2	9.3		
6	20.7	9.4		
9	20.2	9.4		
12	19.2	9.1		
15	18.4	9.0		
18	15.8	8.5		
21	12.9	7.4		
24	11.1	5.6		
27	10.1	4.1		
30	9.7	3.3		
33	9.2	2.3		
36	8.9	0.6		
38	8.6	0.1		
40	8.5	0.0		



Parameter	SLS	SLB
Total P (µg/L)	9.00	40.00
Dissolved P (µg/L)	NA	NA
Chl-a (µg/L)	1.67	NA
TKN (µg/L)	NA	NA
$NO_3 + NO_2$-N (µg/L)	NA	NA
NH_3-N (µg/L)	NA	NA
Total N (µg/L)	NA	NA
Lab Cond. (µS/cm)	NA	NA
Lab pH	NA	NA
Alkalinity (mg/L $CaCO_3$)	NA	NA
Total Susp. Solids (mg/L)	NA	NA
Calcium (mg/L)	NA	NA
Magnesium (mg/L)	NA	NA
Hardness (mg/L)	NA	NA
Color (SU)	NA	NA
Turbidity (NTU)	NA	NA

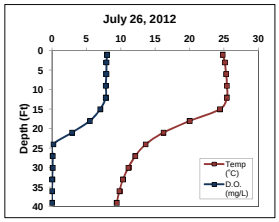
Data collected by TWH and EJG (Onterra)

Spider Lake

Date: 7/26/2012
Time: 9:00
Weather: Overcast, 62F, light drizzle
Entry: EEC

Max Depth: 40.9
SLS Depth (ft): 3.0
SLB Depth (ft): 38.0
Secchi Depth (ft): 8.5

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	24.8	8.0	7.7	
3	25.1	7.9	7.8	
6	25.3	7.9	7.9	
9	25.4	7.8	8.0	
12	25.4	7.8	8.0	
15	24.4	7.0	8.0	
18	20.0	5.5	7.7	
21	16.2	2.9	7.4	
24	13.6	0.2	7.3	
27	12.1	0.1	7.3	
30	11.1	0.1	7.2	
33	10.3	0.0	7.1	
36	9.8	0.0	7.1	
39	9.4	0.0	7.0	



Parameter	SLS	SLB
Total P (µg/L)	14.00	226.00
Dissolved P (µg/L)	ND	183.00
Chl-a (µg/L)	1.78	NA
TKN (µg/L)	320.00	1460.00
$NO_3 + NO_2$-N (µg/L)	ND	ND
NH_3-N (µg/L)	ND	80.00
Total N (µg/L)	320.00	1460.00
Lab Cond. (µS/cm)	96.00	124.00
Lab pH	8.02	7.03
Alkalinity (mg/L $CaCO_3$)	44.50	59.60
Total Susp. Solids (mg/L)	ND	4.00
Calcium (mg/L)	12.60	NA
Magnesium (mg/L)	3.50	NA
Hardness (mg/L)	45.60	NA
Color (SU)	10.00	NA
Turbidity (NTU)	NA	NA

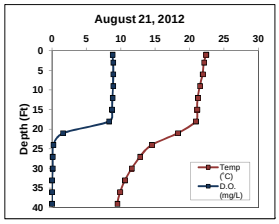
Data collected by BTB (Onterra)

Spider Lake

Date: 8/21/2012
Time: 13:45
Weather: 30% clouds, 70F, light breeze
Entry: EEC

Max Depth: 41
SLS Depth (ft): 3
SLB Depth (ft): 38
Secchi Depth (ft): 10.2

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	22.4	8.8		
3	22.1	8.9		
6	21.9	8.9		
9	21.5	8.9		
12	21.2	8.8		
15	21.1	8.7		
18	20.9	8.3		
21	18.3	1.6		
24	14.5	0.2		
27	12.8	0.1		
30	11.6	0.1		
33	10.6	0		
36	9.9	0		
39	9.5	0		



Parameter	SLS	SLB
Total P (µg/L)	12	368
Dissolved P (µg/L)	NA	NA
Chl-a (µg/L)	5.69	NA
TKN (µg/L)	NA	NA
$NO_3 + NO_2$-N (µg/L)	NA	NA
NH_3-N (µg/L)	NA	NA
Total N (µg/L)	NA	NA
Lab Cond. (µS/cm)	NA	NA
Lab pH	NA	NA
Alkalinity (mg/L $CaCO_3$)	NA	NA
Total Susp. Solids (mg/L)	NA	NA
Calcium (mg/L)	NA	NA
Magnesium (mg/L)	NA	NA
Hardness (mg/L)	NA	NA
Color (SU)	NA	NA
Turbidity (NTU)	NA	NA

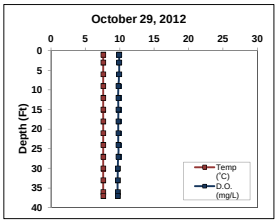
Data collected by TAH (Onterra), MJH, and MKH

Spider Lake

Date: 10/29/2012
Time: 14:00
Weather: 50% clouds, 37F, windy!
Entry: EEC

Max Depth: 38.6
SLS Depth (ft): 3
SLB Depth (ft): 35
Secchi Depth (ft): 8.1

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	7.6	9.9	8.8	97
3	7.6	9.9	8.7	97
6	7.6	9.9	8.7	97
9	7.6	9.8	8.7	97
12	7.6	9.8	8.7	97
15	7.6	9.8	8.7	97
18	7.6	9.8	8.7	97
21	7.6	9.8	8.7	97
24	7.6	9.8	8.7	97
27	7.6	9.8	8.7	97
30	7.6	9.7	8.7	97
33	7.6	9.7	8.7	97
36	7.6	9.7	8.7	97
37	7.6	9.7	8.7	97



Parameter	SLS	SLB
Total P (µg/L)	25.00	24.00
Dissolved P (µg/L)	NA	NA
Chl-a (µg/L)	6.78	NA
TKN (µg/L)	NA	NA
$NO_3 + NO_2$-N (µg/L)	NA	NA
NH_3-N (µg/L)	NA	NA
Total N (µg/L)	NA	NA
Lab Cond. (µS/cm)	NA	NA
Lab pH	NA	NA
Alkalinity (mg/L $CaCO_3$)	NA	NA
Total Susp. Solids (mg/L)	2.00	2.00
Calcium (mg/L)	NA	NA
Magnesium (mg/L)	NA	NA
Hardness (mg/L)	NA	NA
Color (SU)	NA	NA
Turbidity (NTU)	NA	NA

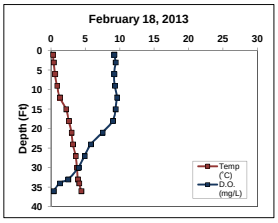
Data collected by EJG (Onterra)

Spider Lake

Date: 2/18/2013
Time: 12:49
Weather: 100% clouds, light breeze, 15˚F
Entry: TWH

Max Depth: 37.5
SLS Depth (ft): 3
SLB Depth (ft): 34
Secchi Depth (ft): 7.4

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	0.3	9.2		
3	0.4	9.4		
6	0.6	9.2		
9	0.9	9.3		
12	1.3	9.6		
15	2.2	9.4		
18	2.6	9		
21	3	7.5		
24	3.2	5.8		
27	3.6	4.9		
30	3.8	4		
33	3.9	2.5		
34	4.1	1.3		
36	4.4	0.4		



Parameter	SLS	SLB
Total P (µg/L)	18.00	30.00
Dissolved P (µg/L)	ND	9.00
Chl-a (µg/L)	NA	NA
TKN (µg/L)	370.00	520.00
$NO_3 + NO_2$-N (µg/L)	66.00	125.00
NH_3-N (µg/L)	52.00	234.00
Total N (µg/L)	NA	NA
Lab Cond. (µS/cm)	NA	NA
Lab pH	NA	NA
Alkalinity (mg/L $CaCO_3$)	NA	NA
Total Susp. Solids (mg/L)	NA	NA
Calcium (mg/L)	NA	NA
Magnesium (mg/L)	NA	NA
Hardness (mg/L)	NA	NA
Color (SU)	NA	NA
Turbidity (NTU)	NA	NA

Data collected by TWH and EJG (Onterra) Ice thickness: 1.5'

Water Quality Data

2012-2013	Surface		Bottom	
Parameter	Count	Mean	Count	Mean
Secchi Depth (feet)	6	9.1	NA	NA
Total P (µg/L)	6	15.8	6	117.8
Dissolved P (µg/L)	3	ND	3	96.0
Chl a (µg/L)	5	4.0	0	NA
TKN (µg/L	3	346.7	3	816.7
NO3+NO2-N (µg/L)	3	91.0	3	133.5
NH3-N (µg/L)	3	52.0	3	422.3
Total N (µg/L)	2	393.0	2	1036.0
Lab Cond. (µS/cm)	2	104.5	2	121.5
Lab pH	2	8.0	2	7.3
Alkal (mg/l CaCO3)	2	46.1	2	54.1
Total Susp. Solids (mg/l)	3	2.0	3	3.0
Calcium (µg/L)	2	12.8	0	NA
Magnesium (mg/L)	2	3.5	0	NA
Hardness (mg/L)	2	45.9	0	NA
Color (SU)	2	12.5	0	NA
Turbidity (NTU)	0	NA	0	NA

Morphological / Geographical Data

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

Watershed Data

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

Trophic State Index (TSI)

Year	TP	Chl-a	Secchi
1984		51.0	42.3
1985			
2006			41.9
2007			42.8
2008			42.8
2009			42.1
2010			41.7
2011			41.9
2012	39.6	41.5	43.7
All Years (Weighted)	39.6	44.9	42.5
Deep, Lowland Drainage Lakes	49.4	49.7	46.2
NLF Ecoregion	48.1	47.5	45.7

	Secchi (feet)				Chlorophyll-a (µg/L)				Total Phosphorus (µg/L)			
	Growing Season		Summer		Growing Season		Summer		Growing Season		Summer	
Year	Count	Mean	Count	Mean	Count	Mean	Count	Mean	Count	Mean	Count	Mean
1984	1	11.2	1	11.2	1	8.0	1	8.0				
1985	1	6.9	0						1	15.0	0.0	
2006	3	10.9	1	11.5								
2007	6	10.8	3	10.8								
2008	6	10.5	3	10.8								
2009	5	10.9	3	11.3								
2010	5	11.7	3	11.7								
2011	5	11.6	3	11.5								
2012	7	10.0	3	10.2	5	4.0	3	3.0	5	15.4	3.0	11.7
All Years (Weighted)		10.8		11.1		4.7		4.3		15.3		11.7
Deep, Lowland Drainage Lakes				8.5				7.0				23.0
NLF Ecoregion				8.9				5.6				21.0

July 2012 N: 320.0
July 2013 P: 14.0

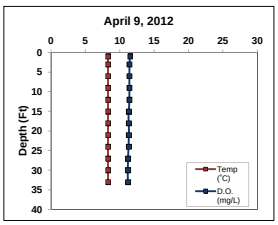
Summer 2012 N:P 23 :1

Island Lake

Date: 4/9/2012
Time: 14:15
Weather: 100% clouds, flurries, windy, 35°F
Entry: TWH

Max Depth: 35.6
ISLS Depth (ft): 3.0
ISLB Depth (ft): 32.0
Secchi Depth (ft): 7.1

Depth (ft)	Temp (°C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	8.3	11.5	8.6	93.0
3	8.3	11.4	8.7	93.0
6	8.3	11.4	8.7	93.0
9	8.3	11.4	8.8	93.0
12	8.3	11.4	8.8	94.0
15	8.3	11.3	8.8	93.0
18	8.3	11.3	8.8	94.0
21	8.3	11.3	8.9	93.0
24	8.3	11.3	8.9	94.0
27	8.3	11.2	8.8	93.0
30	8.3	11.2	8.9	93.0
33	8.3	11.2	8.9	93.0



Parameter	ISLS	ISLB
Total P (µg/L)	22.00	20.00
Dissolved P (µg/L)	ND	ND
Chl-a (µg/L)	6.24	NA
TKN (µg/L)	410.00	490.00
$NO_3 + NO_2$-N (µg/L)	810.00	810.00
NH_3-N (µg/L)	ND	1030.00
Total N (µg/L)	1220.00	1300.00
Lab Cond. (µS/cm)	107.00	119.00
Lab pH	8.06	8.24
Alkalinity (mg/L $CaCO_3$)	46.90	48.20
Total Susp. Solids (mg/L)	2.00	2.00
Calcium (mg/L)	13.00	NA
Magnesium (mg/L)	3.50	NA
Hardness (mg/L)	46.80	NA
Color (SU)	20.00	NA
Turbidity (NTU)	NA	NA

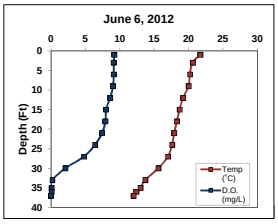
Data collected by TWH (Onterra)

Island Lake

Date: 6/6/2012
Time: 11:10
Weather: 50% clouds, light breeze, 72°F
Entry: TWH

Max Depth: 37.7
ISLS Depth (ft): 3.0
ISLB Depth (ft): 35.0
Secchi Depth (ft): 9.9

Depth (ft)	Temp (°C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	21.7	9.2		
3	20.6	9.1		
6	20.2	9.1		
9	20.0	9.0		
12	19.2	8.6		
15	18.7	8.0		
18	18.3	7.9		
21	17.9	7.4		
24	17.6	6.4		
27	17.0	4.8		
30	15.6	2.1		
33	13.7	0.2		
35	13.0	0.1		
36	12.4	0.1		
37	12.0	0.0		



Parameter	ISLS	ISLB
Total P (µg/L)	13.00	44.00
Dissolved P (µg/L)	NA	NA
Chl-a (µg/L)	2.73	NA
TKN (µg/L)	NA	NA
$NO_3 + NO_2$-N (µg/L)	NA	NA
NH_3-N (µg/L)	NA	NA
Total N (µg/L)	NA	NA
Lab Cond. (µS/cm)	NA	NA
Lab pH	NA	NA
Alkalinity (mg/L $CaCO_3$)	NA	NA
Total Susp. Solids (mg/L)	NA	NA
Calcium (mg/L)	NA	NA
Magnesium (mg/L)	NA	NA
Hardness (mg/L)	NA	NA
Color (SU)	NA	NA
Turbidity (NTU)	NA	NA

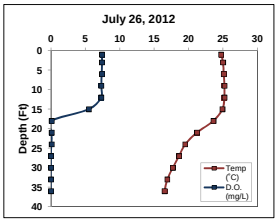
Data collected by TWH and EJG (Onterra)

Island Lake

Date: 7/26/2012
Time: 9:42
Weather: Overcast, 62F, light drizzle
Entry: EEC

Max Depth: 38.0
ISLS Depth (ft): 3.0
ISLB Depth (ft): 34.0
Secchi Depth (ft): 6.2

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	24.7	7.4	7.1	
3	25.0	7.4	7.1	
6	25.1	7.4	7.4	
9	25.2	7.3	7.4	
12	25.2	7.3	7.5	
15	24.9	5.5	7.4	
18	23.6	0.1	7.3	
21	21.2	0.1	7.1	
24	19.5	0.1	7.0	
27	18.6	0.0	7.0	
30	17.7	0.0	7.0	
33	16.9	0.0	7.1	
36	16.5	0.0	7.1	



Parameter	ISLS	ISLB
Total P (µg/L)	17.00	467.00
Dissolved P (µg/L)	ND	396.00
Chl-a (µg/L)	4.03	NA
TKN (µg/L)	530.00	1370.00
$NO_3 + NO_2$-N (µg/L)	ND	ND
NH_3-N (µg/L)	ND	ND
Total N (µg/L)	530.00	1370.00
Lab Cond. (µS/cm)	96.00	127.00
Lab pH	7.85	7.13
Alkalinity (mg/L $CaCO_3$)	45.10	63.80
Total Susp. Solids (mg/L)	2.00	5.00
Calcium (mg/L)	12.50	NA
Magnesium (mg/L)	3.50	NA
Hardness (mg/L)	45.50	NA
Color (SU)	15.00	NA
Turbidity (NTU)	NA	NA

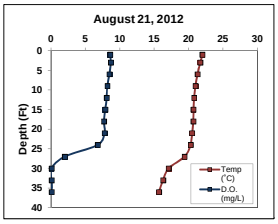
Data collected by BTB (Onterra)

Island Lake

Date: 8/21/2012
Time: 14:15
Weather: 30% clouds, 70F, light breeze
Entry: EEC

Max Depth: 37.1
ISLS Depth (ft): 3
ISLB Depth (ft): 34
Secchi Depth (ft): 5.6

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	22	8.6		
3	21.7	8.7		
6	21.3	8.5		
9	21	8.2		
12	20.8	8.1		
15	20.7	7.9		
18	20.7	7.7		
21	20.5	7.8		
24	20.3	6.8		
27	19.4	2		
30	17.1	0.1		
33	16.3	0.1		
36	15.7	0.1		



Parameter	ISLS	ISLB
Total P (µg/L)	22	481
Dissolved P (µg/L)	NA	NA
Chl-a (µg/L)	12.4	NA
TKN (µg/L)	NA	NA
$NO_3 + NO_2$-N (µg/L)	NA	NA
NH_3-N (µg/L)	NA	NA
Total N (µg/L)	NA	NA
Lab Cond. (µS/cm)	NA	NA
Lab pH	NA	NA
Alkalinity (mg/L $CaCO_3$)	NA	NA
Total Susp. Solids (mg/L)	NA	NA
Calcium (mg/L)	NA	NA
Magnesium (mg/L)	NA	NA
Hardness (mg/L)	NA	NA
Color (SU)	NA	NA
Turbidity (NTU)	NA	NA

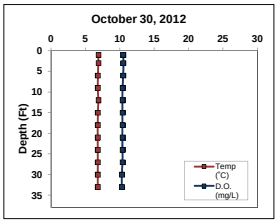
Data collected by TAH (Onterra), MJH, and MKH

Island Lake

Date: 10/30/2012
Time: 2:30
Weather: 50% clouds, 37F, windy!
Entry: EEC

Max Depth: 34.5
ISLS Depth (ft): 3
ISLB Depth (ft): 31
Secchi Depth (ft): 8.2

Depth (ft)	Temp (°C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	6.9	10.5	8.8	95
3	6.9	10.5	8.8	95
6	6.8	10.5	8.8	95
9	6.8	10.4	8.8	95
12	6.9	10.4	8.8	96
15	6.8	10.4	8.8	95
18	6.8	10.4	8.8	96
21	6.8	10.4	8.8	95
24	6.8	10.4	8.8	95
27	6.8	10.4	8.8	95
30	6.8	10.3	8.8	96
33	6.8	10.3	8.8	95



Parameter	ISLS	ISLB
Total P (µg/L)	43	36
Dissolved P (µg/L)	NA	NA
Chl-a (µg/L)	9.52	NA
TKN (µg/L)	NA	NA
$NO_3 + NO_2$-N (µg/L)	NA	NA
NH_3-N (µg/L)	NA	NA
Total N (µg/L)	NA	NA
Lab Cond. (µS/cm)	NA	NA
Lab pH	NA	NA
Alkalinity (mg/L $CaCO_3$)	NA	NA
Total Susp. Solids (mg/L)	NA	NA
Calcium (mg/L)	NA	NA
Magnesium (mg/L)	NA	NA
Hardness (mg/L)	NA	NA
Color (SU)	NA	NA
Turbidity (NTU)	NA	NA

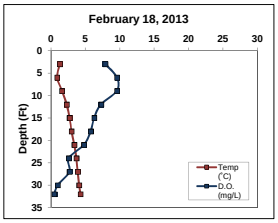
Data collected by EJG (Onterra)

Island Lake

Date: 2/18/2013
Time: 10:41
Weather: 100% clouds, breezy, 12°F
Entry: TWH

Max Depth: 33.5
ISLS Depth (ft): 3
ISLB Depth (ft): 30.5
Secchi Depth (ft): 7.7

Depth (ft)	Temp (°C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1				
3	1.3	7.9		
6	0.9	9.6		
9	1.6	9.6		
12	2.3	7.3		
15	2.7	6.3		
18	3	5.8		
21	3.4	4.8		
24	3.7	2.6		
27	3.9	2.7		
30	4.1	1		
32	4.3	0.5		



Parameter	ISLS	ISLB
Total P (µg/L)	14.00	53.00
Dissolved P (µg/L)	3.00	24.00
Chl-a (µg/L)	NA	NA
TKN (µg/L)	260.00	860.00
$NO_3 + NO_2$-N (µg/L)	97.00	66.00
NH_3-N (µg/L)	56.00	451.00
Total N (µg/L)	NA	NA
Lab Cond. (µS/cm)	NA	NA
Lab pH	NA	NA
Alkalinity (mg/L $CaCO_3$)	NA	NA
Total Susp. Solids (mg/L)	NA	NA
Calcium (mg/L)	NA	NA
Magnesium (mg/L)	NA	NA
Hardness (mg/L)	NA	NA
Color (SU)	NA	NA
Turbidity (NTU)	NA	NA

Data collected by TWH and EJG (Onterra) Ice thickness: 1.5'

Water Quality Data

2012-2013	Surface		Bottom	
Parameter	Count	Mean	Count	Mean
Secchi Depth (feet)	6	7.5	NA	NA
Total P (µg/L)	6	21.8	6	183.5
Dissolved P (µg/L)	3	3.0	3	210.0
Chl a (µg/L)	5	7.0	0	NA
TKN (µg/L	3	400.0	3	906.7
NO3+NO2-N (µg/L)	3	453.5	3	438.0
NH3-N (µg/L)	3	56.0	3	740.5
Total N (µg/L)	2	875.0	2	1335.0
Lab Cond. (µS/cm)	2	101.5	2	123.0
Lab pH	2	8.0	2	7.7
Alkal (mg/l CaCO3)	2	46.0	2	56.0
Total Susp. Solids (mg/l)	2	2.0	2	3.5
Calcium (µg/L)	2	12.8	0	NA
Magnesium (mg/L)	2	3.5	0	NA
Hardness (mg/L)	2	46.2	0	NA
Color (SU)	2	17.5	0	NA
Turbidity (NTU)	0	NA	0	NA

Morphological / Geographical Data

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

Watershed Data

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

Trophic State Index (TSI)

Year	TP	Chl-a	Secchi
1993			48.3
1994			47.6
1995			46.2
1996			47.4
1997			48.1
1998			47.7
1999			48.8
2002			48.9
2003			43.4
2004			46.9
2005			46.6
2006			44.4
2007	53.2	37.1	47.6
2008			46.6
2009			45.0
2010			45.4
2011			44.7
2012	45.3	48.8	46.8
All Years (Weighted)	47.7	46.9	46.6
Deep, Lowland Drainage Lakes	49.4	49.7	46.2
NLF Ecoregion	48.1	47.5	45.7

	Secchi (feet)				Chlorophyll-a (µg/L)				Total Phosphorus (µg/L)			
	Growing Season		Summer		Growing Season		Summer		Growing Season		Summer	
Year	Count	Mean	Count	Mean	Count	Mean	Count	Mean	Count	Mean	Count	Mean
1993	17	6.9	12	7.4								
1994	7	7.3	5	7.8								
1995	10	7.9	7	8.5								
1996	8	7.6	7	7.9								
1997	3	7.1	1	7.5								
1998	7	7.7	6	7.7								
~~1999~~	2	7.1	2	7.1								
2002	10	7.1	8	7.1								
2003	6	9.6	3	10.4								
2004	11	7.6	6	8.2								
2005	11	8.3	7	8.3								
2006	11	10.0	7	9.7								
2007	11	7.6	8	7.8	1	1.9	1	1.9	1	30.0	1.0	30.0
2008	8	7.8	6	8.3								
2009	10	9.0	7	9.3								
2010	12	9.3	9	9.1								
2011	11	9.4	10	9.5								
2012	21	8.0	15	8.2	5	7.0	3	6.4	5	23.4	3.0	17.3
All Years (Weighted)		8.1		8.3		6.1		5.3		24.5		20.5
Deep, Lowland Drainage Lakes				8.5				7.0				23.0
NLF Ecoregion				8.9				5.6				21.0

July 2012 N: 530.0
July 2012 P: 17.0

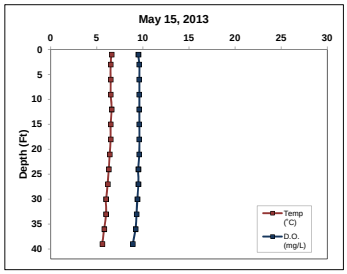
Summer 2012 N:P 31 :1

Clear Lake

Date: 5/15/2013
Time: 12:55
Weather: 10% clouds, breezy, 72F
Entry: EEC

Max Depth: 40.2
CLS Depth (ft): 3.0
CLB Depth (ft): 37.0
Secchi Depth (ft): 8.2

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	6.6	9.5	6.8	92.2
3	6.5	9.6	6.9	92.4
6	6.5	9.6	6.9	92.6
9	6.5	9.6	6.9	92.5
12	6.6	9.6	7.0	92.5
15	6.5	9.6	6.7	92.1
18	6.5	9.6	7.0	92.0
21	6.4	9.6	7.0	92.6
24	6.3	9.5	7.0	92.6
27	6.2	9.5	7.0	92.4
30	6.0	9.4	7.0	92.2
33	6.0	9.3	7.0	92.5
36	5.8	9.2	7.0	92.6
39	5.6	8.9	6.9	93.5



Parameter	CLS	CLB
Total P (µg/L)	27.00	26.50
Dissolved P (µg/L)	ND	ND
Chl-a (µg/L)	4.70	NA
TKN (µg/L)	339.00	229.00
$NO_3 + NO_2$-N (µg/L)	144.00	145.00
NH_3-N (µg/L)	31.50	38.00
Total N (µg/L)	514.50	412.00
Lab Cond. (µS/cm)	96.70	97.00
Lab pH	7.51	7.46
Alkalinity (mg/L $CaCO_3$)	41.80	41.80
Total Susp. Solids (mg/L)	2.00	ND
Calcium (mg/L)	11.70	NA
Magnesium (mg/L)	3.20	NA
Hardness (mg/L)	42.40	NA
Color (SU)	20.00	NA
Turbidity (NTU)	NA	NA

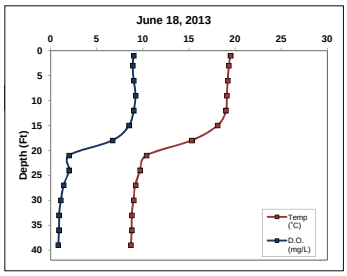
Data collected by TAH (Onterra)

Clear Lake

Date: 6/18/2013
Time: 10:50
Weather: Clear, light breeze, 57F
Entry: EEH

Max Depth: 40.6
CLS Depth (ft): 3.0
CLB Depth (ft): 37.0
Secchi Depth (ft): 14.6

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	19.5	9.0		
3	19.3	8.9		
6	19.2	9.0		
9	19.1	9.2		
12	19.0	9.0		
15	18.1	8.5		
18	15.3	6.7		
21	10.4	2.0		
24	9.7	2.0		
27	9.2	1.4		
30	9.0	1.1		
33	8.8	0.9		
36	8.8	0.9		
39	8.7	0.8		



Parameter	CLS	CLB
Total P (µg/L)	21.60	47.30
Dissolved P (µg/L)	NA	NA
Chl-a (µg/L)	3.01	NA
TKN (µg/L)	NA	NA
$NO_3 + NO_2$-N (µg/L)	NA	NA
NH_3-N (µg/L)	NA	NA
Total N (µg/L)	NA	NA
Lab Cond. (µS/cm)	NA	NA
Lab pH	NA	NA
Alkalinity (mg/L $CaCO_3$)	NA	NA
Total Susp. Solids (mg/L)	NA	NA
Calcium (mg/L)	11.20	NA
Magnesium (mg/L)	3.18	NA
Hardness (mg/L)	41.20	NA
Color (SU)	NA	NA
Dissolved P (µg/L)	NA	NA

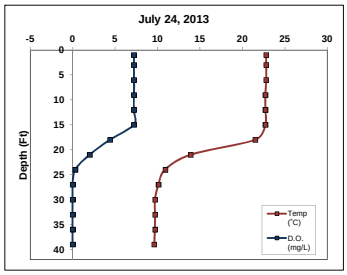
Data collected by TAH (Onterra)

Clear Lake

Date: 7/24/2013
Time: 9:15
Weather: 50% clouds, 65F, light breeze
Entry: EEH

Max Depth: 40.2
CLS Depth (ft): 3.0
CLB Depth (ft): 37.0
Secchi Depth (ft): 7.7

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	22.8	7.2	8.3	92.0
3	22.8	7.2	8.3	92.0
6	22.8	7.2	8.3	92.0
9	22.7	7.2	8.3	92.0
12	22.7	7.2	8.3	92.0
15	22.7	7.2	8.3	92.0
18	21.5	4.4	7.6	95.0
21	13.9	2.0	7.1	99.0
24	10.9	0.3	7.0	104.0
27	10.1	0.0	6.9	109.0
30	9.7	0.0	6.9	115.0
33	9.7	0.0	7.0	115.0
36	9.7	0.0	7.0	116.0
39	9.6	0.0	7.0	118.0



Parameter	CLS	CLB
Total P (µg/L)	15.10	27.40
Dissolved P (µg/L)	ND	2.00
Chl-a (µg/L)	6.45	NA
TKN (µg/L)	625.00	613.00
$NO_3 + NO_2$-N (µg/L)	ND	ND
NH_3-N (µg/L)	ND	115.00
Total N (µg/L)	625.00	728.00
Lab Cond. (µS/cm)	94.00	110.00
Lab pH	7.87	7.24
Alkalinity (mg/L $CaCO_3$)	42.30	51.90
Total Susp. Solids (mg/L)	2.40	6.33
Calcium (mg/L)	NA	NA
Magnesium (mg/L)	NA	NA
Hardness (mg/L)	NA	NA
Color (SU)	10.00	NA
Turbidity (NTU)	NA	NA

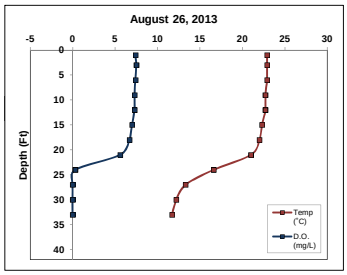
Data collected by TAH (Onterra)

Clear Lake

Date: 8/26/2013
Time:
Weather: 67F, light wind, 100% clouds
Entry: EEH

Max Depth: 33.1
CLS Depth (ft): 3.0
CLB Depth (ft): 30.0
Secchi Depth (ft): 11.2

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	22.9	7.4		
3	22.9	7.5		
6	22.9	7.4		
9	22.7	7.3		
12	22.7	7.3		
15	22.3	7.0		
18	22.0	6.7		
21	21.0	5.6		
24	16.6	0.3		
27	13.3	0.0		
30	12.2	0.0		
33	11.7	0.0		



Parameter	CLS	CLB
Total P (µg/L)	8.10	42.80
Dissolved P (µg/L)	NA	NA
Chl-a (µg/L)	2.20	NA
TKN (µg/L)	NA	NA
$NO_3 + NO_2$-N (µg/L)	NA	NA
NH_3-N (µg/L)	NA	NA
Total N (µg/L)	NA	NA
Lab Cond. (µS/cm)	NA	NA
Lab pH	NA	NA
Alkalinity (mg/L $CaCO_3$)	NA	NA
Total Susp. Solids (mg/L)	NA	NA
Calcium (mg/L)	11.70	NA
Magnesium (mg/L)	NA	NA
Hardness (mg/L)	NA	NA
Color (SU)	NA	NA
Turbidity (NTU)	NA	NA

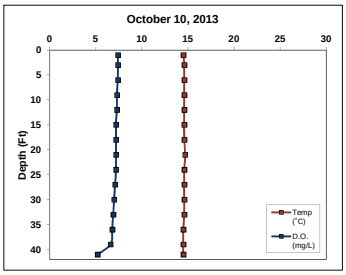
Data collected by MKH and TAH (Onterra)

Clear Lake

Date: 10/10/2013
Time: 9:35
Weather: Clear, 25% clouds, 49F, no wind
Entry: EEH

Max Depth: 42.0
CLS Depth (ft): 3.0
CLB Depth (ft): 39.0
Secchi Depth (ft): 8.4

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	14.5	7.4		
3	14.6	7.4		
6	14.6	7.4		
9	14.6	7.3		
12	14.6	7.3		
15	14.6	7.2		
18	14.6	7.2		
21	14.7	7.2		
24	14.6	7.2		
27	14.6	7.1		
30	14.6	7.0		
33	14.6	6.9		
36	14.5	6.8		
39	14.5	6.6		
41	14.5	5.2		



Parameter	CLS	CLB
Total P (µg/L)	27.50	33.20
Dissolved P (µg/L)	NA	NA
Chl-a (µg/L)	8.50	NA
TKN (µg/L)	NA	NA
$NO_3 + NO_2$-N (µg/L)	NA	NA
NH_3-N (µg/L)	NA	NA
Total N (µg/L)	NA	NA
Lab Cond. (µS/cm)	NA	NA
Lab pH	NA	NA
Alkalinity (mg/L $CaCO_3$)	NA	NA
Total Susp. Solids (mg/L)	2.00	2.20
Calcium (mg/L)	NA	NA
Magnesium (mg/L)	NA	NA
Hardness (mg/L)	NA	NA
Color (SU)	NA	NA
Turbidity (NTU)	NA	NA

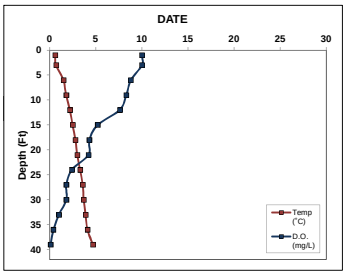
Data collected by TWH and TAH (Onterra)

Clear Lake

Date: 2/19/2014
Time: 12:20
Weather: 100% sun, southern wind 10-15 mph, 30F
Entry: EEH

Max Depth: 40.8
CLS Depth (ft): 3.0
CLB Depth (ft): 37.0
Secchi Depth (ft): 12.7

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	0.6	10.0		
3	0.7	10.0		
6	1.5	8.8		
9	1.8	8.3		
12	2.2	7.6		
15	2.5	5.2		
18	2.8	4.3		
21	3.0	4.2		
24	3.3	2.4		
27	3.6	1.8		
30	3.7	1.8		
33	3.9	1.0		
36	4.1	0.4		
39	4.7	0.1		



Parameter	CLS	CLB
Total P (µg/L)	13.50	42.40
Dissolved P (µg/L)	4.60	5.80
Chl-a (µg/L)	NA	NA
TKN (µg/L)	328.00	905.00
$NO_3 + NO_2$-N (µg/L)	72.60	ND
NH_3-N (µg/L)	34.80	600.00
Total N (µg/L)	435.40	1505.00
Lab Cond. (µS/cm)	NA	NA
Lab pH	NA	NA
Alkalinity (mg/L $CaCO_3$)	NA	NA
Total Susp. Solids (mg/L)	NA	NA
Calcium (mg/L)	NA	NA
Magnesium (mg/L)	NA	NA
Hardness (mg/L)	NA	NA
Color (SU)	NA	NA
Turbidity (NTU)	NA	NA

Data collected by TWH and DAC. Ice Thickness: 1.8 ft

Water Quality Data

2013-2014	Surface		Bottom	
Parameter	Count	Mean	Count	Mean
Secchi Depth (feet)	6	10.5	NA	NA
Total P (µg/L)	6	18.8	6	36.6
Dissolved P (µg/L)	3	4.6	3	3.9
Chl a (µg/L)	5	5.0	0	NA
TKN (µg/L	3	430.7	3	582.3
NO3+NO2-N (µg/L)	3	108.3	3	145.0
NH3-N (µg/L)	3	33.2	3	251.0
Total N (µg/L)	3	525.0	3	881.7
Lab Cond. (µS/cm)	2	95.4	2	103.5
Lab pH	2	7.7	2	7.4
Alkal (mg/l CaCO3)	2	42.1	2	46.9
Total Susp. Solids (mg/l)	3	2.1	3	4.3
Calcium (µg/L)	3	11.5	0	NA
Magnesium (mg/L)	2	3.2	0	NA
Hardness (mg/L)	2	41.8	0	NA
Color (SU)	2	15.0	0	NA
Turbidity (NTU)	0	NA	0	NA

Morphological / Geographical Data

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

Watershed Data

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

Trophic State Index (TSI)

Year	TP	Chl-a	Secchi
1994			44.1
1995			42.9
1996			45.9
1997	46.6	42.6	40.3
1998	47.6	44.7	42.0
1999	41.1	36.4	42.2
2000	45.8	47.6	43.9
2001	48.3	49.7	46.4
2002	42.9	46.9	40.0
2003	45.3	46.4	41.3
2004	47.6	45.2	40.8
2005	43.2	43.9	41.0
2006	48.9	46.5	40.2
2008	47.1	45.9	42.8
2009	46.9	44.8	40.8
2011	45.3	46.3	47.6
2013	43.1	43.9	42.4
All Years (Weighted)	45.8	45.4	42.2
Deep, Lowland Drainage Lakes	49.4	49.7	46.2
NLF Ecoregion	48.1	47.5	45.7

	Secchi (feet)				Chlorophyll-a (µg/L)				Total Phosphorus (µg/L)			
	Growing Season		Summer		Growing Season		Summer		Growing Season		Summer	
Year	Count	Mean	Count	Mean	Count	Mean	Count	Mean	Count	Mean	Count	Mean
1994	8	8.4	5	9.9								
1995	12	9.2	8	10.8								
1996	6	8.4	5	8.8								
1997	8	11.7	6	12.9	5	6.2	3	3.4	5	22.6	3.0	19.0
1998	13	10.2	10	11.4	6	7.3	4	4.2	5	27.6	3.0	20.3
1999	11	11.0	8	11.3	4	3.4	3	1.8	5	14.0	3.0	13.0
2000	5	9.2	4	10.1	4	6.5	3	5.7	4	19.5	3.0	18.0
2001	5	7.5	3	8.4	4	7.5	3	7.0	4	22.8	3.0	21.3
2002	8	12.9	5	13.1	4	6.7	3	5.3	5	16.6	3.0	14.7
2003	5	12.1	3	12.0	4	9.9	3	5.0	5	18.8	3.0	17.3
2004	5	10.5	3	12.4	4	7.9	3	4.4	4	20.5	3.0	20.3
2005	7	10.8	5	12.3	4	8.2	3	3.9	5	20.6	4.0	15.0
2006	8	11.5	6	13.0	3	5.1	3	5.1	3	22.3	3.0	22.3
2008	6	10.4	4	10.8	3	4.8	3	4.8	3	19.7	3.0	19.7
2009	5	12.5	5	12.5	3	4.3	3	4.3	3	19.3	3.0	19.3
2011	3	7.8	3	7.8	3	5.0	3	5.0	3	17.3	3.0	17.3
2013	5	10.0	3	11.2	5	5.0	3	3.9	5	19.9	3.0	14.9
All Years (Weighted)		10.3		11.3		6.4		4.5		20.1		18.0
Deep, Lowland Drainage Lakes				8.5				7.0				23.0
NLF Ecoregion				8.9				5.6				21.0

July 2013 N: 625.0
July 2013 P: 15.1

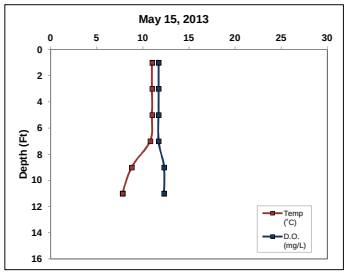
Summer 2013 N:P 41 :1

Fawn Lake

Date: 5/15/2013
Time: 12:10
Weather: clear, windy, 72F
Entry: EEC

Max Depth: 13.6
FLS Depth (ft): 3.0
FLB Depth (ft): 11.0
Secchi Depth (ft): 8.4

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	11.0	11.7	8.3	78.2
3	11.0	11.7	8.2	78.3
5	11.0	11.7	8.3	78.2
7	10.8	11.7	8.3	78.1
9	8.8	12.3	8.3	78.4
11	7.8	12.3	8.2	79.0



Parameter	FLS	FLB
Total P (µg/L)	30.00	39.90
Dissolved P (µg/L)	2.20	ND
Chl-a (µg/L)	5.57	NA
TKN (µg/L)	205.00	391.00
$NO_3 + NO_2$-N (µg/L)	ND	ND
NH_3-N (µg/L)	ND	ND
Total N (µg/L)	205.00	391.00
Lab Cond. (µS/cm)	81.50	84.80
Lab pH	7.73	7.63
Alkalinity (mg/L $CaCO_3$)	35.80	37.00
Total Susp. Solids (mg/L)	2.20	2.40
Calcium (mg/L)	9.89	NA
Magnesium (mg/L)	2.73	NA
Hardness (mg/L)	35.90	NA
Color (SU)	15.00	NA
Turbidity (NTU)	NA	NA

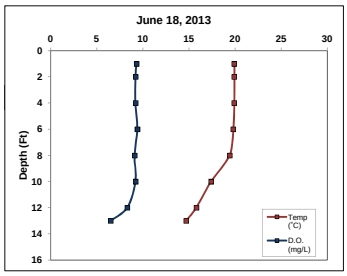
Data collected by TAH (Onterra)

Fawn Lake

Date: 6/18/2013
Time: 10:15
Weather: Clear, light breeze, 57F
Entry: EEH

Max Depth: 14.0
FLS Depth (ft): 3.0
FLB Depth (ft): 11.0
Secchi Depth (ft): 11.3

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	19.9	9.3		
2	19.9	9.2		
4	19.9	9.2		
6	19.8	9.4		
8	19.4	9.1		
10	17.4	9.2		
12	15.8	8.3		
13	14.7	6.5		



Parameter	FLS	FLB
Total P (µg/L)	28.70	17.00
Dissolved P (µg/L)	NA	NA
Chl-a (µg/L)	3.20	NA
TKN (µg/L)	NA	NA
$NO_3 + NO_2$-N (µg/L)	NA	NA
NH_3-N (µg/L)	NA	NA
Total N (µg/L)	NA	NA
Lab Cond. (µS/cm)	NA	NA
Lab pH	NA	NA
Alkalinity (mg/L $CaCO_3$)	NA	NA
Total Susp. Solids (mg/L)	NA	NA
Calcium (mg/L)	11.00	NA
Magnesium (mg/L)	3.00	NA
Hardness (mg/L)	39.80	NA
Color (SU)	NA	NA
Turbidity (NTU)	NA	NA

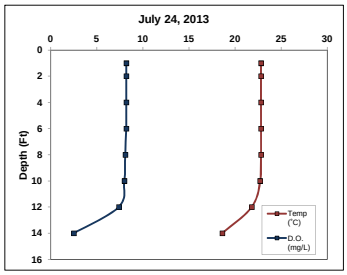
Data collected by TAH (Onterra)

Fawn Lake

Date: 7/24/2013
Time: 8:45
Weather: 50% clouds, 65F, light breeze
Entry: EEH

Max Depth: 15.0
FLS Depth (ft): 3.0
FLB Depth (ft): 12.0
Secchi Depth (ft): 7.7

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	22.8	8.2	9.1	85.0
2	22.8	8.2	9.1	85.0
4	22.8	8.2	9.0	85.0
6	22.8	8.2	9.0	85.0
8	22.8	8.1	9.0	85.0
10	22.7	8.0	9.0	85.0
12	21.8	7.4	8.0	90.0
14	18.6	2.5	7.2	107.0



Parameter	FLS	FLB
Total P (µg/L)	20.00	323.00
Dissolved P (µg/L)	ND	2.30
Chl-a (µg/L)	6.43	NA
TKN (µg/L)	636.00	578.00
$NO_3 + NO_2$-N (µg/L)	ND	ND
NH_3-N (µg/L)	ND	ND
Total N (µg/L)	636.00	578.00
Lab Cond. (µS/cm)	86.60	89.80
Lab pH	8.03	7.57
Alkalinity (mg/L $CaCO_3$)	39.20	41.80
Total Susp. Solids (mg/L)	2.60	2.80
Calcium (mg/L)	NA	NA
Magnesium (mg/L)	NA	NA
Hardness (mg/L)	NA	NA
Color (SU)	15.00	NA
Turbidity (NTU)	NA	NA

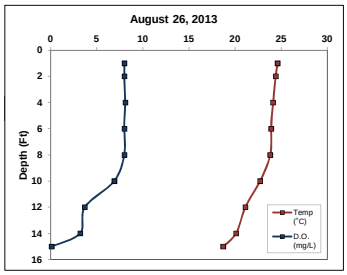
Data collected by TAH and DAC (Onterra)

Fawn Lake

Date: 8/26/2013
Time:
Weather: 67F, light wind, 100% clouds
Entry: EEH

Max Depth: 15.5
FLS Depth (ft): 3.0
FLB Depth (ft): 13.0
Secchi Depth (ft): 7.5

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	24.6	8.0		
2	24.4	8.0		
4	24.1	8.1		
6	23.9	8.0		
8	23.8	8.0		
10	22.7	6.9		
12	21.1	3.7		
14	20.1	3.2		
15	18.7	0.1		



Parameter	FLS	FLB
Total P (µg/L)	8.93	58.70
Dissolved P (µg/L)	NA	NA
Chl-a (µg/L)	10.60	NA
TKN (µg/L)	NA	NA
$NO_3 + NO_2$-N (µg/L)	NA	NA
NH_3-N (µg/L)	NA	NA
Total N (µg/L)	NA	NA
Lab Cond. (µS/cm)	NA	NA
Lab pH	NA	NA
Alkalinity (mg/L $CaCO_3$)	NA	NA
Total Susp. Solids (mg/L)	NA	NA
Calcium (mg/L)	9.99	NA
Magnesium (mg/L)	NA	NA
Hardness (mg/L)	NA	NA
Color (SU)	NA	NA
Turbidity (NTU)	NA	NA

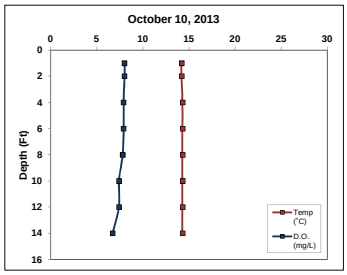
Data collected by MKH and TAH (Onterra)

Fawn Lake

Date: 10/10/2013
Time: 9:15
Weather: Clear, 25% clouds, 49F, no wind
Entry: EEH

Max Depth: 14.8
FLS Depth (ft): 3.0
FLB Depth (ft): 12.0
Secchi Depth (ft): 11.0

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	14.2	8.0		
2	14.2	8.0		
4	14.3	7.9		
6	14.3	7.9		
8	14.3	7.8		
10	14.3	7.4		
12	14.3	7.4		
14	14.3	6.7		



Parameter	FLS	FLB
Total P (µg/L)	26.40	26.90
Dissolved P (µg/L)	NA	NA
Chl-a (µg/L)	6.41	NA
TKN (µg/L)	NA	NA
$NO_3 + NO_2$-N (µg/L)	NA	NA
NH_3-N (µg/L)	NA	NA
Total N (µg/L)	NA	NA
Lab Cond. (µS/cm)	NA	NA
Lab pH	NA	NA
Alkalinity (mg/L $CaCO_3$)	NA	NA
Total Susp. Solids (mg/L)	ND	ND
Calcium (mg/L)	NA	NA
Magnesium (mg/L)	NA	NA
Hardness (mg/L)	NA	NA
Color (SU)	NA	NA
Turbidity (NTU)	NA	NA

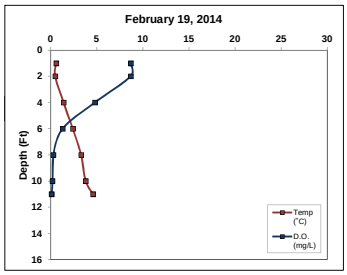
Data collected by TWH and TAH (Onterra)

Fawn Lake

Date: 2/19/2014
Time: 12:57
Weather: 100% sun, southern wind 10-15 mph, 30F
Entry: EEH

Max Depth: 12.2
FLS Depth (ft): 3.0
FLB Depth (ft): 10.0
Secchi Depth (ft): 7.2

Depth (ft)	Temp (˚C)	D.O. (mg/L)	pH	Sp. Cond. (µS/cm)
1	0.6	8.7		
2	0.5	8.7		
4	1.4	4.8		
6	2.4	1.3		
8	3.3	0.3		
10	3.8	0.2		
11	4.6	0.1		



Parameter	FLS	FLB
Total P (µg/L)	29.90	296.00
Dissolved P (µg/L)	5.00	110.00
Chl-a (µg/L)	NA	NA
TKN (µg/L)	510.00	1020.00
$NO_3 + NO_2$-N (µg/L)	54.00	ND
NH_3-N (µg/L)	188.00	572.00
Total N (µg/L)	752.00	1592.00
Lab Cond. (µS/cm)	NA	NA
Lab pH	NA	NA
Alkalinity (mg/L $CaCO_3$)	NA	NA
Total Susp. Solids (mg/L)	NA	NA
Calcium (mg/L)	NA	NA
Magnesium (mg/L)	NA	NA
Hardness (mg/L)	NA	NA
Color (SU)	NA	NA
Turbidity (NTU)	NA	NA

Data collected by TWH and DAC. Ice Thickness: 1.7 ft

Water Quality Data

2013-2014	Surface		Bottom	
Parameter	Count	Mean	Count	Mean
Secchi Depth (feet)	6	8.9	NA	NA
Total P (µg/L)	6	24.0	6	126.9
Dissolved P (µg/L)	3	3.6	3	56.2
Chl a (µg/L)	5	6.4	0	NA
TKN (µg/L	3	450.3	3	663.0
NO3+NO2-N (µg/L)	3	54.0	3	ND
NH3-N (µg/L)	3	188.0	3	572.0
Total N (µg/L)	3	531.0	3	853.7
Lab Cond. (µS/cm)	2	84.1	2	87.3
Lab pH	2	7.9	2	7.6
Alkal (mg/l CaCO3)	2	37.5	2	39.4
Total Susp. Solids (mg/l)	3	2.4	3	2.6
Calcium (µg/L)	3	10.3	0	NA
Magnesium (mg/L)	2	2.9	0	NA
Hardness (mg/L)	2	37.9	0	NA
Color (SU)	2	15.0	0	NA
Turbidity (NTU)	0	NA	0	NA

Morphological / Geographical Data

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

Watershed Data

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

Trophic State Index (TSI)

Year	TP	Chl-a	Secchi
1985			
2013	46.8	49.3	45.7
All Years (Weighted)	46.8	49.3	45.7
Shallow, Lowland Drainage Lakes	54.6	52.6	52.4
NLF Ecoregion	48.1	47.5	45.7

	Secchi (feet)				Chlorophyll-a (µg/L)				Total Phosphorus (µg/L)			
	Growing Season		Summer		Growing Season		Summer		Growing Season		Summer	
Year	Count	Mean	Count	Mean	Count	Mean	Count	Mean	Count	Mean	Count	Mean
1985	1	8.9	0						1	27.0	0.0	
2013	5	9.2	3	8.8	5	6.4	3	6.7	5	22.8	3.0	19.2
All Years (Weighted)		9.1		8.8		6.4		6.7		23.5		19.2
Shallow, Lowland Drainage Lakes				5.6				9.4				33.0
NLF Ecoregion				8.9				5.6				21.0

July 2013 N:	636.0
July 2013 P:	20.0
Summer 2013 N:P	32 :1

D

APPENDIX D

Watershed Analysis WiLMS Results

Watershed modeling materials will be included here once completed (Phase V)

E

APPENDIX E

Aquatic Plant Survey Data

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Potamogeton crispus	Ceratophyllum demersum	Ceratophyllum echinatum	Chara spp.	Elodea canadensis	Bidens beckii	Myriophyllum sibiricum	Najas flexilis	Nitella spp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton foliosus	Potamogeton gramineus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria sp. (rosette)	Sparganium sp.	Utricularia vulgaris	Vallisneria americana	Wolffia sp.	Zizania palustris	CX_1
1	46.119558	-89.813328	3	M	P				1																1										
2	46.118901	-89.813330	3	M	P				3						1									3	1							1			
3	46.120214	-89.812381	3	M	P				3											1				3											
4	46.119557	-89.812383	3	M	P				1						1		1															1			
5	46.118899	-89.812385	3	M	P				1						1		2		V				1	1		1									
6	46.120212	-89.811436	3	M	P				1		1				1		1		V					1			V					1			
7	46.118898	-89.811440	4	M	P				3																										
8	46.122838	-89.810482	7	S	P				1		1																								
9	46.120867	-89.810489	4	M	P				3	V																2		2							
10	46.118896	-89.810496	4	M	P				3								1								1	1	1					2			
11	46.118239	-89.810498	5	M	P				1		1									V						1						1			
12	46.117582	-89.810500	8	M	P				2		1			2																					
13	46.123494	-89.809535	11	R	P																														
14	46.122837	-89.809537	19	M	P																														
15	46.122180	-89.809540	9	R	P																														
16	46.121523	-89.809542	9	M	P																														
17	46.120866	-89.809544	4	S	P																														
18	46.120209	-89.809546	6	S	P				1																	1		1							
19	46.119552	-89.809549	7	S	P				1		1				1											1									
20	46.118895	-89.809551	8	M	P				3												1					3									
21	46.118238	-89.809553	10	M	P				3																	3									
22	46.117581	-89.809555	10	M	P				3		1															3		1							
23	46.124149	-89.808588	8	S	P																														
24	46.123492	-89.808590				DEEP																													
25	46.122835	-89.808592				DEEP																													
26	46.122178	-89.808595				DEEP																													
27	46.121521	-89.808597	9	S	P																														
28	46.120864	-89.808599	8	M	P				1																							1			
29	46.120207	-89.808602	7	M	P				1																	1		1				1			
30	46.119550	-89.808604	8	M	P				3																	3									
31	46.118893	-89.808606	9	M	P				3																	3									
32	46.118236	-89.808608	10	M	P				3																	3		1							
33	46.117579	-89.808611	10	M	P				3		1															1		2							
34	46.124148	-89.807643				DEEP																													
35	46.123491	-89.807645				DEEP																													
36	46.122834	-89.807648				DEEP																													
37	46.122177	-89.807650				DEEP																													
38	46.121520	-89.807652				DEEP																													
39	46.120863	-89.807654				NO INFORMATION																													
40	46.120206	-89.807657	4	S	P																														
41	46.118892	-89.807661	6	M	P				2											V					1	1						1			
42	46.118235	-89.807664	7	M	P				2		2					1										1		1				1			
43	46.124803	-89.806696	6	S	P	DEEP			1						1												1					1			
44	46.124146	-89.806698				DEEP																													
45	46.123489	-89.806700				DEEP																													
46	46.122832	-89.806703				DEEP																													
47	46.122175	-89.806705				DEEP																													
48	46.121518	-89.806707				DEEP																													
49	46.120861	-89.806710				DEEP																													
50	46.120204	-89.806712	4	S					3								1							1				2						3	
51	46.124802	-89.805751	6	S	P				3	1								1							2			1				1			
52	46.124145	-89.805753				DEEP																													
53	46.123488	-89.805756				DEEP																													
54	46.122830	-89.805758				DEEP																													

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Potamogeton crispus	Ceratophyllum demersum	Ceratophyllum echinatum	Chara spp.	Elodea canadensis	Bidens beckii	Myriophyllum sibiricum	Najas flexilis	Nitella spp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton foliosus	Potamogeton gramineus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria sp. (rosette)	Sparganium sp.	Utricularia vulgaris	Vallisneria americana	Wolffia sp.	Zizania palustris	CX_1
55	46.122173	-89.805760				DEEP																													
56	46.121516	-89.805763				DEEP																													
57	46.120859	-89.805765				DEEP																													
58	46.120202	-89.805767	6	S	P				2																2	1		1				1			
59	46.119545	-89.805769	4	S	P				1								1												1						
60	46.118888	-89.805772	3	S	P				1								1								2										
61	46.124800	-89.804806	6	S	P	DEEP			1	V			1				1					1			2		1								
62	46.124143	-89.804808				DEEP																													
63	46.123486	-89.804811				DEEP																													
64	46.122829	-89.804813				DEEP																													
65	46.122172	-89.804815				DEEP																													
66	46.121515	-89.804818				DEEP																													
67	46.120858	-89.804820				DEEP																													
68	46.120201	-89.804822				DEEP																													
69	46.119544	-89.804825	7	S	P				1																	1						1			
70	46.118887	-89.804827	6	S	P				1						1										V	1	V					1			
71	46.118230	-89.804829	5	S	P				1								1								V							1			
72	46.117573	-89.804832	5	S	P				1								1								1								1		
73	46.116916	-89.804834	6	S	P				2						1											1									
74	46.116259	-89.804836	7	S	P																														
75	46.115602	-89.804839	7	S	P																														
76	46.125455	-89.803859	6	S	P				2							1										2							1		
77	46.124798	-89.803861	7	S	P				1								1											1							
78	46.124141	-89.803864	20	S	R																														
79	46.123484	-89.803866	24			DEEP																													
80	46.122827	-89.803868				DEEP																													
81	46.122170	-89.803871				DEEP																													
82	46.121513	-89.803873				DEEP																													
83	46.120856	-89.803875				DEEP																													
84	46.120199	-89.803878				DEEP																													
85	46.119542	-89.803880				DEEP																													
86	46.118885	-89.803882				DEEP																													
87	46.118228	-89.803885	10	S	P																														
88	46.117571	-89.803887	8	S	P																														
89	46.116914	-89.803889	9	S	P																														
90	46.116257	-89.803892	21			DEEP																													
91	46.115600	-89.803894	20	M	R																														
92	46.114943	-89.803896	17	S	R																														
93	46.125454	-89.802914	7	S	P																														
94	46.124797	-89.802916	8	S	P																														
95	46.124140	-89.802919				DEEP																													
96	46.123483	-89.802921				DEEP																													
97	46.122826	-89.802923				DEEP																													
98	46.122169	-89.802926				DEEP																													
99	46.121512	-89.802928				DEEP																													
100	46.120855	-89.802930				DEEP																													
101	46.120198	-89.802933				DEEP																													
102	46.119541	-89.802935				DEEP																													
103	46.118884	-89.802937				DEEP																													
104	46.118227	-89.802940				DEEP																													
105	46.117570	-89.802942				DEEP																													
106	46.116913	-89.802944				DEEP																													
107	46.116256	-89.802947				DEEP																													
108	46.115599	-89.802949				DEEP																													

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Potamogeton crispus	Ceratophyllum demersum	Ceratophyllum echinatum	Chara spp.	Elodea canadensis	Bidens beckii	Myriophyllum sibiricum	Najas flexilis	Nitella spp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton foliosus	Potamogeton gramineus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria sp. (rosette)	Sparganium sp.	Utricularia vulgaris	Vallisneria americana	Wolffia sp.	Zizania palustris	CX_1
109	46.114942	-89.802951	19	R	R																														
110	46.125452	-89.801969	7	S	P				1							1																			
111	46.124795	-89.801971	20	M	R																														
112	46.124138	-89.801974				DEEP																													
113	46.123481	-89.801976				DEEP																													
114	46.122824	-89.801979				DEEP																													
115	46.122167	-89.801981				DEEP																													
116	46.121510	-89.801983				DEEP																													
117	46.120853	-89.801986				DEEP																													
118	46.120196	-89.801988				DEEP																													
119	46.119539	-89.801990				DEEP																													
120	46.118882	-89.801993				DEEP																													
121	46.118225	-89.801995				DEEP																													
122	46.117568	-89.801997				DEEP																													
123	46.116911	-89.802000				DEEP																													
124	46.116254	-89.802002				DEEP																													
125	46.115597	-89.802004				DEEP																													
126	46.114940	-89.802007	19	S	R																														
127	46.125450	-89.801024	7	S	P																														
128	46.124793	-89.801027				DEEP																													
129	46.124136	-89.801029				DEEP																													
130	46.123479	-89.801031				DEEP																													
131	46.122822	-89.801034				DEEP																													
132	46.122165	-89.801036				DEEP																													
133	46.121508	-89.801038				DEEP																													
134	46.120851	-89.801041				DEEP																													
135	46.120194	-89.801043				DEEP																													
136	46.119537	-89.801046				DEEP																													
137	46.118880	-89.801048				DEEP																													
138	46.118223	-89.801050				DEEP																													
139	46.117566	-89.801053				DEEP																													
140	46.116909	-89.801055				DEEP																													
141	46.116252	-89.801057				DEEP																													
142	46.115595	-89.801060				DEEP																													
143	46.114938	-89.801062				DEEP																													
144	46.125449	-89.800079	7	S	P																														
145	46.124792	-89.800082				DEEP																													
146	46.124135	-89.800084				DEEP																													
147	46.123478	-89.800086				DEEP																													
148	46.122821	-89.800089				DEEP																													
149	46.122164	-89.800091				DEEP																													
150	46.121507	-89.800094				DEEP																													
151	46.120850	-89.800096				DEEP																													
152	46.120193	-89.800098				DEEP																													
153	46.119536	-89.800101				DEEP																													
154	46.118879	-89.800103				DEEP																													
155	46.118222	-89.800105				DEEP																													
156	46.117565	-89.800108				DEEP																													
157	46.116908	-89.800110				DEEP																													
158	46.116251	-89.800113				DEEP																													
159	46.115594	-89.800115				DEEP																													
160	46.114937	-89.800117				DEEP																													
161	46.114280	-89.800120	2	R	P																														
162	46.125447	-89.799134	7	S	P																														

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Potamogeton crispus	Ceratophyllum demersum	Ceratophyllum echinatum	Chara spp.	Elodea canadensis	Bidens beckii	Myriophyllum sibiricum	Najas flexilis	Nitella spp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton foliosus	Potamogeton gramineus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria sp. (rosette)	Sparganium sp.	Utricularia vulgaris	Vallisneria americana	Wolffia sp.	Zizania palustris	CX_1
163	46.124790	-89.799137				DEEP																													
164	46.124133	-89.799139				DEEP																													
165	46.123476	-89.799142				DEEP																													
166	46.122819	-89.799144				DEEP																													
167	46.122162	-89.799146				DEEP																													
168	46.121505	-89.799149				DEEP																													
169	46.120848	-89.799151				DEEP																													
170	46.120191	-89.799154				DEEP																													
171	46.119534	-89.799156				DEEP																													
172	46.118877	-89.799158				DEEP																													
173	46.118220	-89.799161				DEEP																													
174	46.117563	-89.799163				DEEP																													
175	46.116906	-89.799165				DEEP																													
176	46.116249	-89.799168				DEEP																													
177	46.115592	-89.799170				DEEP																													
178	46.114935	-89.799173				DEEP																													
179	46.114278	-89.799175				DEEP																													
180	46.113621	-89.799177	1	R	P																														
181	46.125445	-89.798190	7	R	P																														
182	46.124788	-89.798192	20	M	R																														
183	46.124131	-89.798194				DEEP																													
184	46.123474	-89.798197				DEEP																													
185	46.1228174	-89.7981992				DEEP																													
186	46.1221604	-89.7982016				DEEP																													
187	46.1215034	-89.798204				DEEP																													
188	46.1208464	-89.7982064				DEEP																													
189	46.1201894	-89.7982088				DEEP																													
190	46.1195324	-89.7982112				DEEP																													
191	46.1188754	-89.7982135				DEEP																													
192	46.1182184	-89.7982159				DEEP																													
193	46.1175613	-89.7982183				DEEP																													
194	46.1169043	-89.7982207				DEEP																													
195	46.1162473	-89.7982231				DEEP																													
196	46.1155903	-89.7982255				DEEP																													
197	46.1149333	-89.7982279				DEEP																													
198	46.1142763	-89.7982303				DEEP																													
199	46.1136193	-89.7982327				DEEP																													
200	46.1129623	-89.7982351	9	R	P																														
201	46.1254438	-89.7972447	19.5	M	R																														
202	46.1247868	-89.7972471				DEEP																													
203	46.1241297	-89.7972495	16	S	R																														
204	46.1234727	-89.7972519				DEEP																													
205	46.1228157	-89.7972543				DEEP																													
206	46.1221587	-89.7972567				DEEP																													
207	46.1215017	-89.7972591				DEEP																													
208	46.1208447	-89.7972615				DEEP																													
209	46.1201877	-89.797264				DEEP																													
210	46.1195307	-89.7972664				DEEP																													
211	46.1188737	-89.7972688				DEEP																													
212	46.1182167	-89.7972712				DEEP																													
213	46.1175597	-89.7972736				DEEP																													
214	46.1169027	-89.797276				DEEP																													
215	46.1162457	-89.7972784				DEEP																													
216	46.1155887	-89.7972808				DEEP																													

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217	46.1149316	-89.7972832				DEEP																													
218	46.1142746	-89.7972856				DEEP																													
219	46.1136176	-89.797288				DEEP																													
220	46.1129606	-89.7972905				DEEP																													
221	46.1123036	-89.7972929	1	R	P																														
222	46.1254421	-89.7962998	11	S	P																														
223	46.1247851	-89.7963022				DEEP																													
224	46.1241281	-89.7963046	12	S	P																														
225	46.1234711	-89.796307				DEEP																													
226	46.1228141	-89.7963095				DEEP																													
227	46.122157	-89.7963119				DEEP																													
228	46.1215	-89.7963143				DEEP																													
229	46.120843	-89.7963167				DEEP																													
230	46.120186	-89.7963192	6	R	P																														
231	46.119529	-89.7963216				DEEP																													
232	46.118872	-89.796324				DEEP																													
233	46.118215	-89.7963264				DEEP																													
234	46.117558	-89.7963288				DEEP																													
235	46.116901	-89.7963313				DEEP																													
236	46.116244	-89.7963337				DEEP																													
237	46.115587	-89.7963361				DEEP																													
238	46.11493	-89.7963385				DEEP																													
239	46.114273	-89.7963409				DEEP																													
240	46.1136159	-89.7963434				DEEP																													
241	46.1129589	-89.7963458				DEEP																													
242	46.1123019	-89.7963482	18	M	R																														
243	46.1096739	-89.7963579	3	R	P																														
244	46.1254404	-89.7953549	12	S	P																														
245	46.1247834	-89.7953573	19	S	R																														
246	46.1241264	-89.7953598				DEEP																													
247	46.1234694	-89.7953622				DEEP																													
248	46.1228124	-89.7953646	13	R	P																														
249	46.1221554	-89.7953671				DEEP																													
250	46.1214983	-89.7953695	11	R	P																														
251	46.1208413	-89.7953719				DEEP																													
252	46.1195273	-89.7953768	19	S	R																														
253	46.1188703	-89.7953792				DEEP																													
254	46.1182133	-89.7953816				DEEP																													
255	46.1175563	-89.7953841				DEEP																													
256	46.1168993	-89.7953865				DEEP																													
257	46.1162423	-89.7953889				DEEP																													
258	46.1155853	-89.7953914				DEEP																													
259	46.1149283	-89.7953938				DEEP																													
260	46.1142713	-89.7953962				DEEP																													
261	46.1136143	-89.7953987				DEEP																													
262	46.1129573	-89.7954011				DEEP																													
263	46.1123002	-89.7954035	20	M	R																														
264	46.1103292	-89.7954108	12.5	S	P																														
265	46.1254387	-89.79441	18.5	M	P																														
266	46.1247817	-89.7944124				DEEP																													
267	46.1241247	-89.7944149				DEEP																													
268	46.1234677	-89.7944173				DEEP																													
269	46.1228107	-89.7944198	20	R	R																														
270	46.1221537	-89.7944222				DEEP																													

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Potamogeton crispus	Ceratophyllum demersum	Ceratophyllum echinatum	Chara spp.	Elodea canadensis	Bidens beckii	Myriophyllum sibiricum	Najas flexilis	Nitella spp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton foliosus	Potamogeton gramineus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria sp. (rosette)	Sparganium sp.	Utricularia vulgaris	Vallisneria americana	Wolffia sp.	Zizania palustris	CX_1
271	46.1214967	-89.7944247				DEEP																													
272	46.1208396	-89.7944271	20	M	R																														
273	46.1201826	-89.7944295	9.5	R	P																														
274	46.1195256	-89.794432	19	M	R																														
275	46.1188686	-89.7944344	8	R	P																														
276	46.1182116	-89.7944369				DEEP																													
277	46.1175546	-89.7944393				DEEP																													
278	46.1168976	-89.7944418				DEEP																													
279	46.1162406	-89.7944442				DEEP																													
280	46.1155836	-89.7944467				DEEP																													
281	46.1149266	-89.7944491				DEEP																													
282	46.1142696	-89.7944515				DEEP																													
283	46.1136126	-89.794454				DEEP																													
284	46.1129556	-89.7944564				DEEP																													
285	46.1122986	-89.7944589	17	R	R																														
286	46.1116415	-89.7944613	18	S	R																														
287	46.1109845	-89.7944637	15	M	P																														
288	46.1103275	-89.7944662	13.5	M	P																														
289	46.125437	-89.7934651	19	M	R																														
290	46.12478	-89.7934676				DEEP																													
291	46.124123	-89.79347				DEEP																													
292	46.123466	-89.7934725				DEEP																													
293	46.122809	-89.7934749	17	M	R																														
294	46.122152	-89.7934774	17	M	R																														
295	46.121495	-89.7934798	20	M	R																														
296	46.1208379	-89.7934823	19	M	R																														
297	46.1201809	-89.7934847	13	M	P																														
298	46.1195239	-89.7934872	16.5	R	R																														
299	46.1188669	-89.7934897	18	S	R																														
300	46.1182099	-89.7934921				DEEP																													
301	46.1175529	-89.7934946				DEEP																													
302	46.1168959	-89.793497				DEEP																													
303	46.1162389	-89.7934995				DEEP																													
304	46.1155819	-89.7935019				DEEP																													
305	46.1149249	-89.7935044				DEEP																													
306	46.1142679	-89.7935068				DEEP																													
307	46.1136109	-89.7935093				DEEP																													
308	46.1129539	-89.7935117	20	M	R																														
309	46.1122968	-89.7935142	14.5	R	P																														
310	46.1116398	-89.7935167	18	M	R																														
311	46.1109828	-89.7935191	16	M	R																														
312	46.1103258	-89.7935216	14.5	M	P																														
313	46.1096688	-89.793524	5	R	P																														
314	46.1254353	-89.7925202	13.5	S	P																														
315	46.1247783	-89.7925227	20	M	R																														
316	46.1241213	-89.7925252	20	M	R																														
317	46.1234643	-89.7925276	20	M	R																														
318	46.1228073	-89.7925301	19	M	R																														
319	46.1221502	-89.7925326	19	M	R																														
320	46.1214932	-89.792535	16.5	S	R																														
321	46.1208362	-89.7925375	20	M	R																														
322	46.1201792	-89.7925399	19	S	R																														
323	46.1195222	-89.7925424	5.5	R	P																														
324	46.1188652	-89.7925449	14	S	P																														

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Potamogeton crispus	Ceratophyllum demersum	Ceratophyllum echinatum	Chara spp.	Elodea canadensis	Bidens beckii	Myriophyllum sibiricum	Najas flexilis	Nitella spp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton foliosus	Potamogeton gramineus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria sp. (rosette)	Sparganium sp.	Utricularia vulgaris	Vallisneria americana	Wolffia sp.	Zizania palustris	CX_1
325	46.1182082	-89.7925473				DEEP																													
326	46.1175512	-89.7925498				DEEP																													
327	46.1168942	-89.7925523				DEEP																													
328	46.1162372	-89.7925547				DEEP																													
329	46.1155802	-89.7925572				DEEP																													
330	46.1149232	-89.7925597				DEEP																													
331	46.1142662	-89.7925621				DEEP																													
332	46.1136092	-89.7925646	20.5	M	R																														
333	46.1129521	-89.7925671	19	M	R																														
334	46.1122951	-89.7925695	18	M	R																														
335	46.1116381	-89.792572	5	R	P																														
336	46.1109811	-89.7925745	16.5	M	P																														
337	46.1103241	-89.7925769	16	M	P																														
338	46.1096671	-89.7925794	14.5	M	P																														
339	46.1260906	-89.7915729	7	S	P																														
340	46.1254336	-89.7915753	18.8	M	R																														
341	46.1247766	-89.7915778	19	M	R																														
342	46.1241195	-89.7915803	19	M	R																														
343	46.1234625	-89.7915828	19	M	R																														
344	46.1228055	-89.7915852	18	M	R																														
345	46.1221485	-89.7915877	18	M	R																														
346	46.1214915	-89.7915902	12	R	P																														
347	46.1201775	-89.7915951	7	R	P																														
348	46.1195205	-89.7915976	17.5	S	R																														
349	46.1188635	-89.7916001				DEEP																													
350	46.1182065	-89.7916026				DEEP																													
351	46.1175495	-89.7916051				DEEP																													
352	46.1168925	-89.7916075				DEEP																													
353	46.1162355	-89.79161				DEEP																													
354	46.1155785	-89.7916125				DEEP																													
355	46.1149215	-89.791615				DEEP																													
356	46.1142644	-89.7916174				DEEP																													
357	46.1136074	-89.7916199				DEEP																													
358	46.1129504	-89.7916224	20	M	R																														
359	46.1122934	-89.7916249				DEEP																													
360	46.1116364	-89.7916273	6	R	P																														
361	46.1109794	-89.7916298	14.5	M	P																														
362	46.1103224	-89.7916323	16	M	P																														
363	46.1096654	-89.7916348	14.5	M	P																														
364	46.1260888	-89.790628	16.1	S	R																														
365	46.1254318	-89.7906304	17.7	M	R																														
366	46.1247748	-89.7906329	17.6	M	R																														
367	46.1241178	-89.7906354	17	M	R																														
368	46.1234608	-89.7906379	17.2	R	R																														
369	46.1228038	-89.7906404	7	R	P																														
370	46.1221468	-89.7906429	6	R	P																														
371	46.1214898	-89.7906454	11	R	P																														
372	46.1208328	-89.7906479	15	S	P																														
373	46.1201758	-89.7906503	16.4	M	R																														
374	46.1195188	-89.7906528	16.8	S	R																														
375	46.1188618	-89.7906553	12.4	M	R																														
376	46.1182048	-89.7906578				DEEP																													
377	46.1175478	-89.7906603				DEEP																													
378	46.1168907	-89.7906628				DEEP																													

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Potamogeton crispus	Ceratophyllum demersum	Ceratophyllum echinatum	Chara spp.	Elodea canadensis	Bidens beckii	Myriophyllum sibiricum	Najas flexilis	Nitella spp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton foliosus	Potamogeton gramineus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria sp. (rosette)	Sparganium sp.	Utricularia vulgaris	Vallisneria americana	Wolffia sp.	Zizania palustris	CX_1
379	46.1162337	-89.7906653				DEEP																													
380	46.1155767	-89.7906678				DEEP																													
381	46.1149197	-89.7906703				DEEP																													
382	46.1142627	-89.7906727				DEEP																													
383	46.1136057	-89.7906752				DEEP																													
384	46.1129487	-89.7906777	18.9	M	R																														
385	46.1122917	-89.7906802	19.1	M	R																														
386	46.1116347	-89.7906827	16	M	R																														
387	46.1109777	-89.7906852	15.5	M	P																														
388	46.1103207	-89.7906877	15.5	M	P																														
389	46.1096637	-89.7906902	14	M	P																														
390	46.1260871	-89.789683	15	S	P																														
391	46.1254301	-89.7896855	16.9	M	R																														
392	46.1247731	-89.789688	16.4	M	R																														
393	46.1241161	-89.7896905	15.5	M	P																														
394	46.1234591	-89.789693	11.5	R	P																														
395	46.1228021	-89.7896955	4.5	S	P																														
396	46.1214881	-89.7897005				NONNAVIGABLE																													
397	46.1208311	-89.789703	13	R	P																														
398	46.120174	-89.7897055	16	M	P																														
399	46.119517	-89.789708	7	R	P																														
400	46.11886	-89.7897105	11	M	P																														
401	46.118203	-89.789713	10.5	S	P																														
402	46.117546	-89.7897155	12	S	P																														
403	46.116889	-89.789718	20.9	S	R																														
404	46.116232	-89.7897205	11.5	S	P																														
405	46.115575	-89.789723	20.5	M	R																														
406	46.114918	-89.7897255	21.6	M	R																														
407	46.114261	-89.789728	18.1	M	R																														
408	46.113604	-89.7897305	18.2	M	R																														
409	46.112947	-89.789733	17	R	P																														
410	46.11229	-89.7897355	16.8	M	R																														
411	46.111633	-89.789738	16.7	M	R																														
412	46.1109759	-89.7897405	19.9	M	R																														
413	46.1103189	-89.789743	15	M	P																														
414	46.1096619	-89.7897455	14	M	P																														
415	46.1260854	-89.7887381	6.5	S	P																														
416	46.1254284	-89.7887407	10	S	P																														
417	46.1247714	-89.7887432	14	M	P																														
418	46.1241143	-89.7887457	14	M	P																														
419	46.1234573	-89.7887482	11.5	S	P																														
420	46.1221433	-89.7887532	2.3	M	P				1																V		1		1						
421	46.1208293	-89.7887582	6.5	R	P				1																										1
422	46.1201723	-89.7887607	4	R	P																														
423	46.1188583	-89.7887658	3.5	S	P																														
424	46.1182013	-89.7887683	4	S	P																														
425	46.1175443	-89.7887708	4	S	P																														
426	46.1168873	-89.7887733	6.5	S	P																														
427	46.1162303	-89.7887758	6.5	S	P																														
428	46.1155733	-89.7887783	6	S	P																														
429	46.1149162	-89.7887808	6.5	S	P																														
430	46.1142592	-89.7887833	7	S	P																														
431	46.1136022	-89.7887859	6	S	P																														
432	46.1129452	-89.7887884	8.5	S	P																														

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Potamogeton crispus	Ceratophyllum demersum	Ceratophyllum echinatum	Chara spp.	Elodea canadensis	Bidens beckii	Myriophyllum sibiricum	Najas flexilis	Nitella spp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton foliosus	Potamogeton gramineus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria sp. (rosette)	Sparganium sp.	Utricularia vulgaris	Vallisneria americana	Wolffia sp.	Zizania palustris	CX_1
433	46.1122882	-89.7887909	16.8	M	R																														
434	46.1116312	-89.7887934	15.5	M	P																														
435	46.1109742	-89.7887959	15.5	M	P																														
436	46.1103172	-89.7887984	15.5	M	P																														
437	46.1096602	-89.7888009	14	M	P																														
438	46.1090032	-89.7888034	11	M	P																														
439	46.1267406	-89.7877907	4	S	P																														
440	46.1260836	-89.7877932	6.5	S	P																														
441	46.1254266	-89.7877958	9	S	P																														
442	46.1247696	-89.7877983	12.5	M	P																														
443	46.1241126	-89.7878008	11.5	M	P																														
444	46.1234556	-89.7878033	9	S	P																														
445	46.1227986	-89.7878059				NONNAVIGABLE																													
446	46.1195135	-89.7878185	3	M	P																														
447	46.1149145	-89.7878361	2	S	P																														
448	46.1142575	-89.7878386	4	S	P																														
449	46.1136005	-89.7878412	6	S	P																														
450	46.1129435	-89.7878437	14	M	P																														
451	46.1122865	-89.7878462	15	M	P																														
452	46.1116295	-89.7878487	15	M	P																														
453	46.1109725	-89.7878512	15	M	P																														
454	46.1103154	-89.7878538	15	M	P																														
455	46.1096584	-89.7878563	13	M	P																														
456	46.1090014	-89.7878588	11	M	P																														
457	46.1273959	-89.7868433	3	S	P																														
458	46.1267389	-89.7868458	6	S	P																														
459	46.1260819	-89.7868483	7	M	P																														
460	46.1254248	-89.7868509	11.5	M	P																														
461	46.1247678	-89.7868534	11.5	M	P																														
462	46.1241108	-89.7868559	5	S	P																														
463	46.1142557	-89.7868939	8.5	S	P																														
464	46.1135987	-89.7868965	11.5	M	P																														
465	46.1129417	-89.786899	13	M	P																														
466	46.1122847	-89.7869015	14	M	P																														
467	46.1116277	-89.7869041	14	M	P																														
468	46.1109707	-89.7869066	14	M	P																														
469	46.1103137	-89.7869091	14	M	P																														
470	46.1096567	-89.7869117	13	M	P																														
471	46.1089997	-89.7869142	11	M	P																														
472	46.1273941	-89.7858984	8.5	S	P																														
473	46.1267371	-89.7859009	9	S	P																														
474	46.1260801	-89.7859034	9	M	P																														
475	46.1254231	-89.785906	9	S	P																														
476	46.1247661	-89.7859085	8.5	S	P																														
477	46.114254	-89.7859492	8.5	S	P																														
478	46.113597	-89.7859518	12.5	M	P																														
479	46.11294	-89.7859543	13	M	P																														
480	46.1122829	-89.7859569	13	M	P																														
481	46.1116259	-89.7859594	13	M	P																														
482	46.1109689	-89.785962	13	M	P																														
483	46.1103119	-89.7859645	13	M	P																														
484	46.1096549	-89.785967	12	M	P																														
485	46.1089979	-89.7859696	9.5	M	P																														
486	46.1083409	-89.7859721	4	S	P																														

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Potamogeton crispus	Ceratophyllum demersum	Ceratophyllum echinatum	Chara spp.	Elodea canadensis	Bidens beckii	Myriophyllum sibiricum	Najas flexilis	Nitella spp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton foliosus	Potamogeton gramineus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria sp. (rosette)	Sparganium sp.	Utricularia vulgaris	Vallisneria americana	Wolffia sp.	Zizania palustris	CX_1
487	46.1076839	-89.7859747	3.5	M	P				2					2																					
488	46.1273923	-89.7849534	7.5	S	P																														
489	46.1267353	-89.784956	9	M	P																														
490	46.1260783	-89.7849585	5	S	P																														
491	46.1142522	-89.7850045	6.5	S	P																														
492	46.1135952	-89.7850071	11	M	P																														
493	46.1129382	-89.7850097	12	M	P																														
494	46.1122812	-89.7850122	12.5	M	P																														
495	46.1116242	-89.7850148	12.5	M	P																														
496	46.1109672	-89.7850173	12.5	M	P																														
497	46.1103102	-89.7850199	12	M	P																														
498	46.1096531	-89.7850224	11	M	P																														
499	46.1089961	-89.785025	10	M	P																														
500	46.1083391	-89.7850275	5	S	P																														
501	46.1076821	-89.7850301	2.75	S	P																														
502	46.1273905	-89.7840085	3.5	S	P																														
503	46.1142504	-89.7840598	7	M	P																														
504	46.1135934	-89.7840624	11	M	P																														
505	46.1129364	-89.784065	11	M	P																														
506	46.1122794	-89.7840675	11	M	P																														
507	46.1116224	-89.7840701	12	M	P																														
508	46.1109654	-89.7840727	11	M	P																														
509	46.1103084	-89.7840752	11	M	P																														
510	46.1096514	-89.7840778	10	R	P																														
511	46.1089944	-89.7840804	9	M	P																														
512	46.1083373	-89.7840829	6	R	P																														
513	46.1076803	-89.7840855	5	S	P																														
514	46.1149056	-89.7831126	1	S	P																														
515	46.1142486	-89.7831152	9	M	P																														
516	46.1135916	-89.7831177	10	M	P																														
517	46.1129346	-89.7831203	11	M	P																														
518	46.1122776	-89.7831229	11	M	P																														
519	46.1116206	-89.7831255	11	M	P																														
520	46.1109636	-89.783128	10	S	P																														
521	46.1103066	-89.7831306	10	M	P																														
522	46.1096496	-89.7831332	10	M	P																														
523	46.1089926	-89.7831358	10	M	P																														
524	46.1149038	-89.7821679	6	S	P																														
525	46.1142468	-89.7821705	8	M	P																														
526	46.1135898	-89.782173	9	M	P																														
527	46.1129328	-89.7821756	10	M	P																														
528	46.1122758	-89.7821782	10	M	P																														
529	46.1116188	-89.7821808	10	M	P																														
530	46.1109618	-89.7821834	10	M	P																														
531	46.1103048	-89.782186	10	M	P																														
532	46.1096478	-89.7821886	10	M	P																														
533	46.1089908	-89.7821912	9	M	P																														
534	46.1083338	-89.7821937	8	M	P																														
535	46.1076768	-89.7821963	3	R	P																														
536	46.115559	-89.7812206	5	S	P																														
537	46.114902	-89.7812232	6	R	P																														
538	46.114245	-89.7812258	8	M	P																														
539	46.113588	-89.7812284	9	M	P																														
540	46.112931	-89.781231	9	M	P																														

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Potamogeton crispus	Ceratophyllum demersum	Ceratophyllum echinatum	Chara spp.	Elodea canadensis	Bidens beckii	Myriophyllum sibiricum	Najas flexilis	Nitella spp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton foliosus	Potamogeton gramineus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria sp. (rosette)	Sparganium sp.	Utricularia vulgaris	Vallisneria americana	Wolffia sp.	Zizania palustris	CX_1
541	46.112274	-89.7812336	9	M	P																														
542	46.111617	-89.7812362	9	M	P																														
543	46.11096	-89.7812388	9.5	M	P																														
544	46.110303	-89.7812414	9	M	P																														
545	46.109646	-89.781244	10	M	P																														
546	46.108989	-89.7812465	9	M	P																														
547	46.108332	-89.7812491	9	M	P																														
548	46.107675	-89.7812517	7	M	P																														
549	46.1168712	-89.7802706				NONNAVIGABLE																													
550	46.1162142	-89.7802732				NONNAVIGABLE																													
551	46.1155572	-89.7802758	3	M	P																														
552	46.1135862	-89.7802837	5	R	P																														
553	46.1129292	-89.7802863	8	M	P																														
554	46.1122722	-89.7802889	9	M	P																														
555	46.1116152	-89.7802915	9	M	P																														
556	46.1109582	-89.7802941	9	M	P																														
557	46.1103012	-89.7802967	9	M	P																														
558	46.1096442	-89.7802993	9	M	P																														
559	46.1089872	-89.7803019	9	M	P																														
560	46.1083301	-89.7803046	8	M	P																														
561	46.1076731	-89.7803072	8	M	P																														
562	46.1155554	-89.7793311				NONNAVIGABLE																													
563	46.1148984	-89.7793337				NONNAVIGABLE																													
564	46.1122704	-89.7793442	6	R	P																														
565	46.1116134	-89.7793468	5	R	P																														
566	46.1109564	-89.7793495	9	M	P																														
567	46.1102994	-89.7793521	9	M	P																														
568	46.1096423	-89.7793547	9	M	P																														
569	46.1089853	-89.7793573	9	M	P																														
570	46.1083283	-89.77936	8	M	P																														
571	46.1142396	-89.7783917				NONNAVIGABLE																													
572	46.1116115	-89.7784022	8	M	P																														
573	46.1109545	-89.7784048	8	M	P																														
574	46.1102975	-89.7784075	8	M	P																														
575	46.1096405	-89.7784101	8	M	P																														
576	46.1089835	-89.7784127	8	R	P																														
577	46.1083265	-89.7784154	2	R	P																														
578	46.1076695	-89.778418	3	M	P																														
579	46.1142377	-89.777447				NONNAVIGABLE																													
580	46.1122667	-89.7774549				NONNAVIGABLE																													
581	46.1116097	-89.7774575		S	P	CAN'T READ																													
582	46.1109527	-89.7774602	2	R	P																														
583	46.1102957	-89.7774628	8	M	P																														
584	46.1096387	-89.7774655	8	M	P																														
585	46.1089817	-89.7774681	7	M	P																														
586	46.1083247	-89.7774708	8	M	P																														
587	46.1076677	-89.7774734	4	M	P																														
588	46.1070106	-89.777476	3	M	P											V																			
589	46.1155499	-89.776497				NONNAVIGABLE																													
590	46.1129219	-89.7765076				NONNAVIGABLE																													
591	46.1122649	-89.7765102				NONNAVIGABLE																													
592	46.1116079	-89.7765129				NONNAVIGABLE																													
593	46.1096368	-89.7765209	6	S	P																														
594	46.1089798	-89.7765235	7.5	M	P																														

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Potamogeton crispus	Ceratophyllum demersum	Ceratophyllum echinatum	Chara spp.	Elodea canadensis	Bidens beckii	Myriophyllum sibiricum	Najas flexilis	Nitella spp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton foliosus	Potamogeton gramineus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria sp. (rosette)	Sparganium sp.	Utricularia vulgaris	Vallisneria americana	Wolffia sp.	Zizania palustris	CX_1
595	46.1083228	-89.7765262	7	M	P																														
596	46.1076658	-89.7765288	5	M	P																														
597	46.1070088	-89.7765315	3	M	P																														
598	46.1063518	-89.7765341	3	M	P				3		1														V					1				3	
599	46.11292	-89.7755629				NONNAVIGABLE																													
600	46.112263	-89.7755656				NONNAVIGABLE																													
601	46.111606	-89.7755682				NONNAVIGABLE																													
602	46.108321	-89.7755816	6	M	P																														
603	46.107664	-89.7755842	5.5	M	P																														
604	46.107007	-89.7755869	3	M	P																														
605	46.1063499	-89.7755896				NONNAVIGABLE																													
606	46.1050359	-89.7755949				NONNAVIGABLE																													
607	46.1122612	-89.7746209				NONNAVIGABLE																													
608	46.1116042	-89.7746236				NONNAVIGABLE																													
609	46.1109471	-89.7746263				NONNAVIGABLE																													
610	46.1089761	-89.7746343	6.5	M	P																														
611	46.1083191	-89.774637	6	M	P																														
612	46.1076621	-89.7746396	6	M	P																														
613	46.1070051	-89.7746423	3	M	P																														
614	46.1063481	-89.774645				NONNAVIGABLE																													
615	46.1056911	-89.7746477				NONNAVIGABLE																													
616	46.1050341	-89.7746504				NONNAVIGABLE																													
617	46.1116023	-89.7736789				NONNAVIGABLE																													
618	46.1109453	-89.7736816				NONNAVIGABLE																													
619	46.1102883	-89.7736843				NONNAVIGABLE																													
620	46.1096313	-89.773687			P	CAN'T READ																													
621	46.1089743	-89.7736897	6.5	M	P																														
622	46.1083172	-89.7736924	5	M	P																														
623	46.1076602	-89.7736951	2.5	R	P																														
624	46.1070032	-89.7736978				NONNAVIGABLE																													
625	46.1056892	-89.7737031				NONNAVIGABLE																													
626	46.1116004	-89.7727343				NONNAVIGABLE																													
627	46.1109434	-89.772737				NONNAVIGABLE																													
628	46.1102864	-89.7727397				NONNAVIGABLE																													
629	46.1096294	-89.7727424	5	M	P				3					1																				3	
630	46.1089724	-89.7727451	5	M	P				3																									3	
631	46.1083154	-89.7727478	6	M	P																														
632	46.1076584	-89.7727505	6	M	P																														
633	46.1070014	-89.7727532	5	M	P																														
634	46.1063444	-89.7727559	3.5	M	P				1																				1					1	
635	46.1056873	-89.7727586				NONNAVIGABLE																													
636	46.1096275	-89.7717978	5	M	P				3		1																							2	
637	46.1089705	-89.7718005	6	M	P				3											1									1					3	
638	46.1083135	-89.7718032	5	M	P				3		1					1													1					3	
639	46.1076565	-89.7718059	5	M	P				3			1																						3	
640	46.1069995	-89.7718086	5	M	P				1												1														
641	46.1063425	-89.7718113	4.75	M	P																														
642	46.1056855	-89.771814	3.5	M	P																														
643	46.1050285	-89.7718167				NONNAVIGABLE																													
644	46.1096256	-89.7708531	3	M	P				3											V														3	
645	46.1089686	-89.7708559	4	M	P				1					1																				1	
646	46.1083116	-89.7708586	6	M	P				3		1								1															3	
647	46.1076546	-89.7708613	5	M	P				3																							1		3	
648	46.1069976	-89.770864	4	M	P																														

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Potamogeton crispus	Ceratophyllum demersum	Ceratophyllum echinatum	Chara spp.	Elodea canadensis	Bidens beckii	Myriophyllum sibiricum	Najas flexilis	Nitella spp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton foliosus	Potamogeton gramineus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria sp. (rosette)	Sparganium sp.	Utricularia vulgaris	Vallisneria americana	Wolffia sp.	Zizania palustris	CX_1
649	46.1063406	-89.7708668	5	M	P																													
650	46.1056836	-89.7708695	5.5	M	P																													
651	46.1050266	-89.7708722	4	S	P																													
652	46.1076527	-89.7699167	4	M	P				3							V																	3	
653	46.1069957	-89.7699195	4	M	P				1																			1						
654	46.1063387	-89.7699222	4	M	P				1							1																		
655	46.1056817	-89.7699249	3	M	P				3											V													3	

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Ceratophyllum demersum	Chara spp.	Elodea canadensis	Heteranthera dubia	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Potamogeton amplifolius	Potamogeton foliosus	Potamogeton friesii	Potamogeton pusillus	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton zosteriformis	Sparganium fluctuans	Utricularia vulgaris	Vallisneria americana	Zizania palustris	Aquatic moss	Freshwater sponge	Filamentous algae	Najas guadalupensis
1	46.144650	-89.886164	4	Sand	Pole				3					1						1			2					2					
2	46.150589	-89.885440	0			NONNAVIGABLE (PLANTS)																											
3	46.145639	-89.885450	1	Sand	Pole				0																								
4	46.145144	-89.885451	4	Sand	Pole				1		1					1																	
5	46.144649	-89.885452	5	Sand	Pole				1		1																						
6	46.144154	-89.885453	3	Sand	Pole				1							1																	
7	46.151084	-89.884726	0			NONNAVIGABLE (PLANTS)																											
8	46.150589	-89.884727	0			NONNAVIGABLE (PLANTS)																											
9	46.150094	-89.884728	0			NONNAVIGABLE (PLANTS)																											
10	46.146134	-89.884737	11	Sand	Pole				0																								
11	46.145639	-89.884738	15		Rope				0																								
12	46.145144	-89.884739	23		Rope				0																								
13	46.144649	-89.884740	13		Rope				0																								
14	46.144154	-89.884741	11	Sand	Pole				0																								
15	46.143659	-89.884742	9	Sand	Pole				1										1														
16	46.143164	-89.884743	3	Sand	Pole				0																								
17	46.151578	-89.884013	0			NONNAVIGABLE (PLANTS)																											
18	46.151083	-89.884014	0			NONNAVIGABLE (PLANTS)																											
19	46.150588	-89.884015	0			NONNAVIGABLE (PLANTS)																											
20	46.147123	-89.884022	5	Sand	Pole				0																								
21	46.146628	-89.884024	11	Sand	Pole				0																								
22	46.146133	-89.884025	15		Rope				0																								
23	46.145638	-89.884026	27		Rope				0																								
24	46.145143	-89.884027	0			DEEP																											
25	46.144648	-89.884028	0			DEEP																											
26	46.144153	-89.884029	13		Rope				0																								
27	46.143658	-89.884030	13	Sand	Pole				0																								
28	46.143163	-89.884031	11	Sand	Pole				0																								
29	46.142668	-89.884032	1	Sand	Pole				1							1																	
30	46.139203	-89.884039	5	Sand	Pole				0																								
31	46.138708	-89.884040	12	Sand	Pole				0																								
32	46.138213	-89.884041	0			DEEP																											
33	46.137718	-89.884042	12	Rock	Pole				0																								
34	46.151577	-89.883301	0			NONNAVIGABLE (PLANTS)																											
35	46.151082	-89.883302	0			NONNAVIGABLE (PLANTS)																											
36	46.150587	-89.883303	0			NONNAVIGABLE (PLANTS)																											
37	46.147617	-89.883309	11	Sand	Pole				0																								
38	46.147122	-89.883310	20		Rope				0																								
39	46.146627	-89.883311	21		Rope				0																								
40	46.146132	-89.883312	10	Rock	14				0																								
41	46.145637	-89.883313	0			DEEP																											
42	46.145142	-89.883314	0			DEEP																											
43	46.144647	-89.883316	0			DEEP																											
44	46.144152	-89.883317	0			DEEP																											
45	46.143657	-89.883318	0			DEEP																											
46	46.143162	-89.883319	16		Rope				0																								
47	46.142667	-89.883320	11	Sand	Pole				0																								
48	46.140192	-89.883325	3	Sand	Pole				0																								
49	46.139697	-89.883326	11	Sand	Pole				0																								
50	46.139202	-89.883327	0			DEEP																											
51	46.138707	-89.883328	0			DEEP																											
52	46.138212	-89.883329	0			DEEP																											
53	46.137717	-89.883330	14		Rope				0																								
54	46.151081	-89.882590	5	Muck	Pole				2			1			2								1										

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Ceratophyllum demersum	Chara spp.	Elodea canadensis	Heteranthera dubia	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Potamogeton amplifolius	Potamogeton foliosus	Potamogeton friesii	Potamogeton pusillus	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton zosteriformis	Sparganium fluctuans	Utricularia vulgaris	Vallisneria americana	Zizania palustris	Aquatic moss	Freshwater sponge	Filamentous algae	Najas guadalupensis
55	46.150586	-89.882591	6	Muck	Pole				1	1		1			1	1						1							1				
56	46.150091	-89.882592	3	Muck	Pole				3					1	1			1			1					1			1	3			
57	46.148606	-89.882595	1	Sand	Pole				0																								
58	46.148111	-89.882596	7	Sand	Pole				0																								
59	46.147616	-89.882597	13	Sand	Pole				0																								
60	46.147121	-89.882598	20		Rope				0																								
61	46.146626	-89.882599	29			DEEP																											
62	46.146131	-89.882600	32			DEEP																											
63	46.145636	-89.882601	0			DEEP																											
64	46.145141	-89.882602	0			DEEP																											
65	46.144646	-89.882603	0			DEEP																											
66	46.144151	-89.882604	0			DEEP																											
67	46.143656	-89.882605	0			DEEP																											
68	46.143161	-89.882607	0			DEEP																											
69	46.142666	-89.882608	13	Sand	Pole				0																								
70	46.140686	-89.882612	4	Sand	Pole				1							1																	
71	46.140191	-89.882613	13	Sand	Pole				0																								
72	46.139696	-89.882614	0			DEEP																											
73	46.139201	-89.882615	0			DEEP																											
74	46.138706	-89.882616	0			DEEP																											
75	46.138211	-89.882617	0			DEEP																											
76	46.137716	-89.882618	7	Sand	Pole				0																								
77	46.151081	-89.881877	5	Muck	Pole				0																								
78	46.150586	-89.881879	6	Sand	Pole				0																								
79	46.150091	-89.881880	6	Sand	Pole				0																								
80	46.149596	-89.881881	8	Muck	Pole				0																								
81	46.149101	-89.881882	9	Muck	Pole				0																								
82	46.148606	-89.881883	9	Muck	Pole				0																								
83	46.148111	-89.881884	9	Sand	Pole				0																								
84	46.147616	-89.881885	11	Sand	Pole				0																								
85	46.147121	-89.881886	14	Sand	Pole				0																								
86	46.146626	-89.881887	0			DEEP																											
87	46.146131	-89.881888	0			DEEP																											
88	46.145636	-89.881889	0			DEEP																											
89	46.145141	-89.881890	0			DEEP																											
90	46.144646	-89.881891	0			DEEP																											
91	46.144151	-89.881892	0			DEEP																											
92	46.143656	-89.881893	0			DEEP																											
93	46.143161	-89.881894	0			DEEP																											
94	46.142666	-89.881895	21		Rope				0																								
95	46.142171	-89.881897	3	Sand	Pole				0																								
96	46.140686	-89.881900	11	Sand	Pole				0																								
97	46.140191	-89.881901	0			DEEP																											
98	46.139696	-89.881902	0			DEEP																											
99	46.139201	-89.881903	0			DEEP																											
100	46.138706	-89.881904	0			DEEP																											
101	46.138211	-89.881905	0			DEEP																											
102	46.151575	-89.881164	2	Rock	Pole				0																								
103	46.151080	-89.881165	5	Sand	Pole				0																								
104	46.150585	-89.881166	8	Sand	Pole				0																								
105	46.150090	-89.881167	9	Muck	Pole				0																								
106	46.149595	-89.881168	9	Muck	Pole				0																								
107	46.149100	-89.881169	12	Muck	Pole				0																								
108	46.148605	-89.881171	9	Muck	Pole				0																								

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Ceratophyllum demersum	Chara spp.	Elodea canadensis	Heteranthera dubia	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Potamogeton amplifolius	Potamogeton foliosus	Potamogeton friesii	Potamogeton pusillus	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton zosteriformis	Sparganium fluctuans	Utricularia vulgaris	Vallisneria americana	Zizania palustris	Aquatic moss	Freshwater sponge	Filamentous algae	Najas guadalupensis
109	46.148110	-89.881172	8	Sand	Pole				0																								
110	46.147615	-89.881173	9	Sand	Pole				0																								
111	46.147120	-89.881174	11	Sand	Pole				0																								
112	46.146625	-89.881175	0			DEEP																											
113	46.146130	-89.881176	0			DEEP																											
114	46.145635	-89.881177	0			DEEP																											
115	46.145140	-89.881178	0			DEEP																											
116	46.144645	-89.881179	0			DEEP																											
117	46.144150	-89.881180	0			DEEP																											
118	46.143655	-89.881181	0			DEEP																											
119	46.143160	-89.881182	0			DEEP																											
120	46.142665	-89.881183	0			DEEP																											
121	46.142170	-89.881184	11	Sand	Pole				0																								
122	46.141180	-89.881187	6	Rock	Pole				0																								
123	46.140685	-89.881188	11	Sand	Pole				0																								
124	46.140190	-89.881189	0			DEEP																											
125	46.139695	-89.881190	0			DEEP																											
126	46.139200	-89.881191	0			DEEP																											
127	46.138705	-89.881192	0			DEEP																											
128	46.138210	-89.881193	0			DEEP																											
129	46.151574	-89.880452	5	Sand	Pole				0																								
130	46.151079	-89.880453	9	Muck	Pole				0																								
131	46.150584	-89.880454	9	Muck	Pole				0																								
132	46.150089	-89.880455	12	Muck	Pole				0																								
133	46.149594	-89.880456	12	Muck	Pole				0																								
134	46.149099	-89.880457	13	Muck	Pole				0																								
135	46.148604	-89.880458	13	Muck	Pole				0																								
136	46.148109	-89.880459	10	Sand	Pole				0																								
137	46.147614	-89.880460	11	Sand	Pole				0																								
138	46.147119	-89.880462	11	Sand	Pole				0																								
139	46.146624	-89.880463	0			DEEP																											
140	46.146129	-89.880464	0			DEEP																											
141	46.145634	-89.880465	0			DEEP																											
142	46.145139	-89.880466	0			DEEP																											
143	46.144644	-89.880467	0			DEEP																											
144	46.144149	-89.880468	0			DEEP																											
145	46.143654	-89.880469	0			DEEP																											
146	46.143159	-89.880470	0			DEEP																											
147	46.142664	-89.880471	0			DEEP																											
148	46.142169	-89.880472	11	Sand	Pole				0																								
149	46.141674	-89.880473	7	Sand	Pole				1		1					1			1														
150	46.141179	-89.880474	9	Sand	Pole				2					2																			
151	46.140684	-89.880475	12	Sand	Pole				0																								
152	46.140189	-89.880477	0			DEEP																											
153	46.139694	-89.880478	0			DEEP																											
154	46.139199	-89.880479	0			DEEP																											
155	46.138704	-89.880480	0			DEEP																											
156	46.138209	-89.880481	0			DEEP																											
157	46.137714	-89.880482	0			DEEP																											
158	46.137219	-89.880483	0			DEEP																											
159	46.136724	-89.880484	1	Rock	Pole				0																								
160	46.152068	-89.879739	7	Muck	Pole				0																								
161	46.151573	-89.879740	8	Muck	Pole				1			1																					
162	46.151078	-89.879741	10	Muck	Pole				0																								

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Ceratophyllum demersum	Chara spp.	Elodea canadensis	Heteranthera dubia	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Potamogeton amplifolius	Potamogeton foliosus	Potamogeton friesii	Potamogeton pusillus	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton zosteriformis	Sparganium fluctuans	Utricularia vulgaris	Vallisneria americana	Zizania palustris	Aquatic moss	Freshwater sponge	Filamentous algae	Najas guadalupensis
163	46.150583	-89.879742	13	Muck	Pole				0																								
164	46.150088	-89.879743	13	Muck	Pole				0																								
165	46.149593	-89.879744	13	Muck	Pole				0																								
166	46.149098	-89.879745	13	Muck	Pole				1			1					1																
167	46.148603	-89.879746	13	Muck	Pole				0																								
168	46.148108	-89.879747	10	Sand	Pole				0																								
169	46.147613	-89.879748	11	Sand	Pole				1			1																					
170	46.147118	-89.879749	12	Sand	Pole				0																								
171	46.146623	-89.879750	0			DEEP																											
172	46.146128	-89.879752	0			DEEP																											
173	46.145633	-89.879753	0			DEEP																											
174	46.145138	-89.879754	0			DEEP																											
175	46.144643	-89.879755	0			DEEP																											
176	46.144148	-89.879756	0			DEEP																											
177	46.143653	-89.879757	0			DEEP																											
178	46.143158	-89.879758	0			DEEP																											
179	46.142663	-89.879759	0			DEEP																											
180	46.142168	-89.879760	13		Rope				0																								
181	46.141673	-89.879761	7	Sand	Pole				1							1									1								
182	46.141178	-89.879762	11	Sand	Pole				0																								
183	46.140683	-89.879763	13	Sand	Pole				0																								1	
184	46.140188	-89.879764	0			DEEP																											
185	46.139693	-89.879766	0			DEEP																											
186	46.139198	-89.879767	0			DEEP																											
187	46.138703	-89.879768	0			DEEP																											
188	46.138208	-89.879769	0			DEEP																											
189	46.137713	-89.879770	0			DEEP																											
190	46.137218	-89.879771	0			DEEP																											
191	46.136723	-89.879772	0			DEEP																											
192	46.135733	-89.879774	3	Rock	Pole				0																								
193	46.135238	-89.879775	4	Sand	Pole				0																								
194	46.152563	-89.879025	5	Sand	Pole				1	1																	1						
195	46.152068	-89.879026	7	Muck	Pole				2	2			1		1																		
196	46.151573	-89.879027	8	Muck	Pole				0																								
197	46.151078	-89.879029	9	Muck	Pole				0																								
198	46.150583	-89.879030	10	Muck	Pole				0																								
199	46.150088	-89.879031	12	Muck	Pole				0																								
200	46.149593	-89.879032	12	Muck	Pole				0																								
201	46.149098	-89.879033	12	Muck	Pole				0																								
202	46.148603	-89.879034	14	Muck	Pole				0																								
203	46.148108	-89.879035	12	Sand	Pole				0																								
204	46.147613	-89.879036	12	Sand	Pole				0																								
205	46.147118	-89.879037	16		Rope				0																								
206	46.146623	-89.879038	0			DEEP																											
207	46.146128	-89.879039	0			DEEP																											
208	46.145633	-89.879040	0			DEEP																											
209	46.145138	-89.879042	0			DEEP																											
210	46.144643	-89.879043	0			DEEP																											
211	46.144148	-89.879044	0			DEEP																											
212	46.143653	-89.879045	0			DEEP																											
213	46.143158	-89.879046	0			DEEP																											
214	46.142663	-89.879047	0			DEEP																											
215	46.142168	-89.879048	0			DEEP																											
216	46.141673	-89.879049	11	Sand	Pole				0																								

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Ceratophyllum demersum	Chara spp.	Elodea canadensis	Heteranthera dubia	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Potamogeton amplifolius	Potamogeton foliosus	Potamogeton friesii	Potamogeton pusillus	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton zosteriformis	Sparganium fluctuans	Utricularia vulgaris	Vallisneria americana	Zizania palustris	Aquatic moss	Freshwater sponge	Filamentous algae	Najas guadalupensis
217	46.141178	-89.879050	18		Rope				0																								
218	46.140683	-89.879051	0			DEEP																											
219	46.140188	-89.879052	22		Rope				0																								
220	46.139693	-89.879053	0			DEEP																											
221	46.139198	-89.879055	0			DEEP																											
222	46.138703	-89.879056	0			DEEP																											
223	46.138208	-89.879057	0			DEEP																											
224	46.137713	-89.879058	0			DEEP																											
225	46.137218	-89.879059	0			DEEP																											
226	46.136723	-89.879060	0			DEEP																											
227	46.136228	-89.879061	0			DEEP																											
228	46.135733	-89.879062	0			DEEP																											
229	46.135238	-89.879063	0			DEEP																											
230	46.134743	-89.879064	11	Sand	Pole				0																								
231	46.152562	-89.878313	6	Muck	Pole				2	1		1		1									1		1								
232	46.152067	-89.878314	7	Muck	Pole				3	1															1			3					
233	46.151572	-89.878315	8	Muck	Pole				0																								
234	46.151077	-89.878316	10	Muck	Pole				0																								
235	46.150582	-89.878317	10	Muck	Pole				0																								
236	46.150087	-89.878318	11	Muck	Pole				0																								
237	46.149592	-89.878320	11	Muck	Pole				0																								
238	46.149097	-89.878321	10	Sand	Pole				0																								
239	46.148602	-89.878322	9	Sand	Pole				0																								
240	46.148107	-89.878323	11	Sand	Pole				0																								
241	46.147612	-89.878324	15		Rope				0																								
242	46.147117	-89.878325	32			DEEP																											
243	46.146622	-89.878326	0			DEEP																											
244	46.146127	-89.878327	0			DEEP																											
245	46.145632	-89.878328	0			DEEP																											
246	46.145137	-89.878329	0			DEEP																											
247	46.144642	-89.878330	0			DEEP																											
248	46.144147	-89.878332	0			DEEP																											
249	46.143652	-89.878333	0			DEEP																											
250	46.143157	-89.878334	0			DEEP																											
251	46.142662	-89.878335	0			DEEP																											
252	46.142167	-89.878336	0			DEEP																											
253	46.141672	-89.878337	0			DEEP																											
254	46.141177	-89.878338	0			DEEP																											
255	46.140682	-89.878339	0			DEEP																											
256	46.140187	-89.878340	0			DEEP																											
257	46.139692	-89.878341	0			DEEP																											
258	46.139197	-89.878342	0						0																								
259	46.138702	-89.878344	0			DEEP																											
260	46.138207	-89.878345	0			DEEP																											
261	46.137712	-89.878346	0			DEEP																											
262	46.137217	-89.878347	0			DEEP																											
263	46.136722	-89.878348	0			DEEP																											
264	46.136227	-89.878349	0			DEEP																											
265	46.135732	-89.878350	0			DEEP																											
266	46.135237	-89.878351	0			DEEP																											
267	46.134742	-89.878352	14		Rope				0																								
268	46.134247	-89.878353	2	Sand	Pole				0																								
269	46.152561	-89.877601	6	Muck	Pole				2														2										
270	46.152066	-89.877602	8	Muck	Pole				3	1				2											2								

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Ceratophyllum demersum	Chara spp.	Elodea canadensis	Heteranthera dubia	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Potamogeton amplifolius	Potamogeton foliosus	Potamogeton friesii	Potamogeton pusillus	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton zosteriformis	Sparganium fluctuans	Utricularia vulgaris	Vallisneria americana	Zizania palustris	Aquatic moss	Freshwater sponge	Filamentous algae	Najas guadalupensis
271	46.151571	-89.877603	9	Muck	Pole				1			1																					
272	46.151076	-89.877604	11	Muck	Pole				0																								
273	46.150581	-89.877605	10	Muck	Pole				0																								
274	46.150086	-89.877606	10	Muck	Pole				0																								
275	46.149591	-89.877607	12	Muck	Pole				0																								
276	46.149096	-89.877608	10	Sand	Pole				0																								
277	46.148601	-89.877610	7	Sand	Pole				0																								
278	46.148106	-89.877611	12	Sand	Pole				1			1																					
279	46.147611	-89.877612	15		Rope				0																								
280	46.147116	-89.877613	0			DEEP																											
281	46.146621	-89.877614	0			DEEP																											
282	46.146126	-89.877615	0			DEEP																											
283	46.145631	-89.877616	0			DEEP																											
284	46.145136	-89.877617	0			DEEP																											
285	46.144641	-89.877618	0			DEEP																											
286	46.144146	-89.877619	0			DEEP																											
287	46.143651	-89.877620	0			DEEP																											
288	46.143156	-89.877622	0			DEEP																											
289	46.142661	-89.877623	0			DEEP																											
290	46.142166	-89.877624	0			DEEP																											
291	46.141671	-89.877625	0			DEEP																											
292	46.141176	-89.877626	0			DEEP																											
293	46.140681	-89.877627	0			DEEP																											
294	46.140186	-89.877628	0			DEEP																											
295	46.139691	-89.877629	0			DEEP																											
296	46.139196	-89.877630	14		Rope				0																							1	
297	46.138701	-89.877631	11	Sand	Pole				0																								
298	46.138206	-89.877633	0			DEEP																											
299	46.137711	-89.877634	0			DEEP																											
300	46.137216	-89.877635	0			DEEP																											
301	46.136721	-89.877636	0			DEEP																											
302	46.136226	-89.877637	0			DEEP																											
303	46.135731	-89.877638	0			DEEP																											
304	46.135236	-89.877639	0			DEEP																											
305	46.134741	-89.877640	0			DEEP																											
306	46.134246	-89.877641	12	Sand	Pole				0																								
307	46.152560	-89.876888	6	Muck	Pole				1			1		1									1										
308	46.152065	-89.876890	7	Muck	Pole				3	1		2													1								
309	46.151570	-89.876891	9	Muck	Pole				1	1		1		1																			
310	46.151075	-89.876892	10	Muck	Pole				0																								
311	46.150580	-89.876893	9	Muck	Pole				0																								
312	46.150085	-89.876894	9	Muck	Pole				0																								
313	46.149590	-89.876895	10	Muck	Pole				0																								
314	46.149095	-89.876896	9	Sand	Pole				0																								
315	46.148600	-89.876897	7	Sand	Pole				0																								
316	46.148105	-89.876898	12	Sand	Pole				0																								
317	46.147610	-89.876900	20			DEEP																											
318	46.147115	-89.876901	32			DEEP																											
319	46.146620	-89.876902	0			DEEP																											
320	46.146125	-89.876903	0			DEEP																											
321	46.145630	-89.876904	0			DEEP																											
322	46.145135	-89.876905	0			DEEP																											
323	46.144640	-89.876906	0			DEEP																											
324	46.144145	-89.876907	0			DEEP																											

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Ceratophyllum demersum	Chara spp.	Elodea canadensis	Heteranthera dubia	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Potamogeton amplifolius	Potamogeton foliosus	Potamogeton friesii	Potamogeton pusillus	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton zosteriformis	Sparganium fluctuans	Utricularia vulgaris	Vallisneria americana	Zizania palustris	Aquatic moss	Freshwater sponge	Filamentous algae	Najas guadalupensis
325	46.143650	-89.876908	0			DEEP																											
326	46.143155	-89.876909	0			DEEP																											
327	46.142660	-89.876911	0			DEEP																											
328	46.142165	-89.876912	0			DEEP																											
329	46.141670	-89.876913	0			DEEP																											
330	46.141175	-89.876914	0			DEEP																											
331	46.140680	-89.876915	0			DEEP																											
332	46.140185	-89.876916	0			DEEP																											
333	46.139690	-89.876917	0			DEEP																											
334	46.139195	-89.876918	15	Sand	Pole				0																								
335	46.138700	-89.876919	7	Sand	Pole				0																								
336	46.138205	-89.876920	5	Sand	Pole				1							1			1														
337	46.137710	-89.876922	13	Sand	Pole				0																								
338	46.137215	-89.876923	0			DEEP																											
339	46.136720	-89.876924	0			DEEP																											
340	46.136225	-89.876925	0			DEEP																											
341	46.135730	-89.876926	0			DEEP																											
342	46.135235	-89.876927	0			DEEP																											
343	46.134740	-89.876928	0			DEEP																											
344	46.134245	-89.876929	0			DEEP																											
345	46.133750	-89.876930	4	Sand	Pole				0																								
346	46.152065	-89.876177	4	Sand	Pole				1			1			1																		
347	46.151570	-89.876178	9	Muck	Pole				1			1																					
348	46.151075	-89.876180	10	Muck	Pole				0																								
349	46.150580	-89.876181	10	Muck	Pole				0																								
350	46.150085	-89.876182	10	Muck	Pole				0																								
351	46.149590	-89.876183	10	Muck	Pole				0																								
352	46.149095	-89.876184	11	Sand	Pole				0																								
353	46.148600	-89.876185	10	Sand	Pole				0																								
354	46.148105	-89.876186	7	Sand	Pole				0																								
355	46.147610	-89.876187	14	Sand	Pole				0																								
356	46.147115	-89.876188	0			DEEP																											
357	46.146620	-89.876190	0			DEEP																											
358	46.146125	-89.876191	0			DEEP																											
359	46.145630	-89.876192	0			DEEP																											
360	46.145135	-89.876193	0			DEEP																											
361	46.144640	-89.876194	0			DEEP																											
362	46.144145	-89.876195	0			DEEP																											
363	46.143650	-89.876196	0			DEEP																											
364	46.143155	-89.876197	0			DEEP																											
365	46.142660	-89.876198	0			DEEP																											
366	46.142165	-89.876200	0			DEEP																											
367	46.141670	-89.876201	0			DEEP																											
368	46.141175	-89.876202	0			DEEP																											
369	46.140680	-89.876203	0			DEEP																											
370	46.140185	-89.876204	0			DEEP																											
371	46.139690	-89.876205	0			DEEP																											
372	46.139195	-89.876206	13	Sand	Pole				0																								
373	46.138700	-89.876207	4	Sand	Pole				0																								
374	46.137710	-89.876210	13	Sand	Pole				0																								
375	46.137214	-89.876211	0			DEEP																											
376	46.136719	-89.876212	0			DEEP																											
377	46.136224	-89.876213	0			DEEP																											
378	46.135729	-89.876214	0			DEEP																											

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Ceratophyllum demersum	Chara spp.	Elodea canadensis	Heteranthera dubia	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Potamogeton amplifolius	Potamogeton foliosus	Potamogeton friesii	Potamogeton pusillus	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton zosteriformis	Sparganium fluctuans	Utricularia vulgaris	Vallisneria americana	Zizania palustris	Aquatic moss	Freshwater sponge	Filamentous algae	Najas guadalupensis
379	46.135234	-89.876215	0			DEEP																											
380	46.134739	-89.876216	0			DEEP																											
381	46.134244	-89.876217	0			DEEP																											
382	46.133749	-89.876218	12	Sand	Pole				0																								
383	46.128799	-89.876229	4	Sand	Pole				1							1																	
384	46.128304	-89.876231	6	Muck	Pole				3														3										
385	46.127809	-89.876232	5	Sand	Pole				1							1							1										
386	46.151569	-89.875466	9	Muck	Pole				1			1																					
387	46.151074	-89.875467	11	Muck	Pole				0																								
388	46.150579	-89.875468	11	Muck	Pole				0																								
389	46.150084	-89.875470	12	Muck	Pole				0																								
390	46.149589	-89.875471	13		Rope				0																								
391	46.149094	-89.875472	13	Muck	Pole				0																								
392	46.148599	-89.875473	13	Muck	Pole				0																								
393	46.148104	-89.875474	3	Sand	Pole				1							1																	
394	46.147609	-89.875475	4	Sand	Pole				0																								
395	46.147114	-89.875476	12	Sand	Pole				0																								
396	46.146619	-89.875477	19			DEEP																											
397	46.146124	-89.875478	30			DEEP																											
398	46.145629	-89.875480	0			DEEP																											
399	46.145134	-89.875481	0			DEEP																											
400	46.144639	-89.875482	0			DEEP																											
401	46.144144	-89.875483	0			DEEP																											
402	46.143649	-89.875484	0			DEEP																											
403	46.143154	-89.875485	0			DEEP																											
404	46.142659	-89.875486	0			DEEP																											
405	46.142164	-89.875487	0			DEEP																											
406	46.141669	-89.875489	0			DEEP																											
407	46.141174	-89.875490	0			DEEP																											
408	46.140679	-89.875491	0			DEEP																											
409	46.140184	-89.875492	0			DEEP																											
410	46.139689	-89.875493	14		Rope				0																								
411	46.139194	-89.875494	11	Rock	Pole				0																								
412	46.137709	-89.875497	12	Sand	Pole				0																								
413	46.137214	-89.875499	0			DEEP																											
414	46.136719	-89.875500	0			DEEP																											
415	46.136224	-89.875501	0			DEEP																											
416	46.135729	-89.875502	0			DEEP																											
417	46.135234	-89.875503	0			DEEP																											
418	46.134739	-89.875504	0			DEEP																											
419	46.134244	-89.875505	0			DEEP																											
420	46.133749	-89.875506	13	Sand	Pole				0																								
421	46.133254	-89.875507	0			NONNAVIGABLE (PLANTS)																											
422	46.129789	-89.875515	6	Sand	Pole				2						1										1								
423	46.129294	-89.875516	8	Muck	Pole				3	1					1																		
424	46.128799	-89.875518	7	Muck	Pole				1														1										
425	46.128304	-89.875519	7	Muck	Pole				3					3											1								
426	46.127809	-89.875520	7	Muck	Pole				2					1									1										
427	46.151568	-89.874754	8	Muck	Pole				2			2																					
428	46.151073	-89.874755	12	Muck	Pole				0																								
429	46.150578	-89.874756	13	Muck	Pole				0																								
430	46.150083	-89.874757	14		Pole				0																								
431	46.149588	-89.874758	15		Rope				0																								
432	46.149093	-89.874760	14		Rope				0																								

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Ceratophyllum demersum	Chara spp.	Elodea canadensis	Heteranthera dubia	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Potamogeton amplifolius	Potamogeton foliosus	Potamogeton friesii	Potamogeton pusillus	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton zosteriformis	Sparganium fluctuans	Utricularia vulgaris	Vallisneria americana	Zizania palustris	Aquatic moss	Freshwater sponge	Filamentous algae	Najas guadalupensis
433	46.148598	-89.874761	13	Muck	Pole				0																								
434	46.148103	-89.874762	9	Sand	Pole				0																								
435	46.146618	-89.874765	11	Sand	Pole				0																								
436	46.146123	-89.874766	12	Sand	Pole				0																								
437	46.145628	-89.874767	0			DEEP																											
438	46.145133	-89.874769	0			DEEP																											
439	46.144638	-89.874770	0			DEEP																											
440	46.144143	-89.874771	0			DEEP																											
441	46.143648	-89.874772	0			DEEP																											
442	46.143153	-89.874773	0			DEEP																											
443	46.142658	-89.874774	0			DEEP																											
444	46.142163	-89.874775	0			DEEP																											
445	46.141668	-89.874776	0			DEEP																											
446	46.141173	-89.874778	0			DEEP																											
447	46.140678	-89.874779	0			DEEP																										1	
448	46.140183	-89.874780	16		Rope				0																								
449	46.139688	-89.874781	12	Sand	Pole				0																								
450	46.139193	-89.874782	3	Sand	Pole				0																								
451	46.138203	-89.874784	3	Sand	Pole				0																								
452	46.137708	-89.874785	14		Rope				0																								
453	46.137213	-89.874787	0			DEEP																											
454	46.136718	-89.874788	0			DEEP																											
455	46.136223	-89.874789	0			DEEP																											
456	46.135728	-89.874790	0			DEEP																											
457	46.135233	-89.874791	0			DEEP																											
458	46.134738	-89.874792	0			DEEP																											
459	46.134243	-89.874793	0			DEEP																											
460	46.133748	-89.874794	16		Rope				0																								
461	46.133253	-89.874795	9	Sand	Pole				1										1														
462	46.132758	-89.874797	11	Sand	Pole				1			1																					
463	46.132263	-89.874798	10	Sand	Pole				0																								
464	46.131768	-89.874799	3	Sand	Pole				1							1																	
465	46.131273	-89.874800	0			TEMPORARY OBSTACLE																											
466	46.130283	-89.874802	5	Sand	Pole				1			1											1										
467	46.129788	-89.874803	5	Sand	Pole				1											1													
468	46.129293	-89.874804	9	Muck	Pole				0																								
469	46.128798	-89.874806	8	Muck	Pole				2										1				2										
470	46.128303	-89.874807	7	Muck	Pole				1						1								1		1								
471	46.127808	-89.874808	7	Muck	Pole				1														1										
472	46.127313	-89.874809	7	Muck	Pole				3														3										
473	46.151567	-89.874042	8	Sand	Pole				0																								
474	46.151072	-89.874043	13	Muck	Pole				0																								
475	46.150577	-89.874044	15		Rope				0																								
476	46.150082	-89.874045	17			DEEP																											
477	46.149587	-89.874046	19			DEEP																											
478	46.149092	-89.874047	16			DEEP																											
479	46.148597	-89.874048	14		Rope				0																								
480	46.148102	-89.874050	13	Muck	Pole				0																								
481	46.147607	-89.874051	7	Sand	Pole				1			1																					
482	46.146122	-89.874054	7	Sand	Pole				1							1	1																
483	46.145627	-89.874055	16			DEEP																											
484	46.145132	-89.874056	32			DEEP																											
485	46.144637	-89.874058	0			DEEP																											
486	46.144142	-89.874059	0			DEEP																											

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Ceratophyllum demersum	Chara spp.	Elodea canadensis	Heteranthera dubia	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Potamogeton amplifolius	Potamogeton foliosus	Potamogeton friesii	Potamogeton pusillus	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton zosteriformis	Sparganium fluctuans	Utricularia vulgaris	Vallisneria americana	Zizania palustris	Aquatic moss	Freshwater sponge	Filamentous algae	Najas guadalupensis
487	46.143647	-89.874060	0			DEEP																											
488	46.143152	-89.874061	0			DEEP																											
489	46.142657	-89.874062	0			DEEP																											
490	46.142162	-89.874063	0			DEEP																											
491	46.141667	-89.874064	0			DEEP																											
492	46.141172	-89.874065	0			DEEP																											
493	46.140677	-89.874067	0			DEEP																											
494	46.140182	-89.874068	0			DEEP																											
495	46.139687	-89.874069	11	Sand	Pole				0																								
496	46.138202	-89.874072	12	Sand	Pole				0																								
497	46.137707	-89.874073	0			DEEP																											
498	46.137212	-89.874074	0			DEEP																											
499	46.136717	-89.874076	0			DEEP																											
500	46.136222	-89.874077	0			DEEP																											
501	46.135727	-89.874078	0			DEEP																											
502	46.135232	-89.874079	0			DEEP																											
503	46.134737	-89.874080	0			DEEP																											
504	46.134242	-89.874081	0			DEEP																											
505	46.133747	-89.874082	0			DEEP																											
506	46.133252	-89.874083	0			DEEP																											
507	46.132757	-89.874085	0			DEEP																											
508	46.132262	-89.874086	14		Rope				0																								
509	46.131767	-89.874087	12	Sand	Pole				0																								
510	46.131272	-89.874088	3	Sand	Pole				2							2																	
511	46.129787	-89.874091	11	Sand	Pole				0																								
512	46.129292	-89.874093	11	Muck	Pole				0																								
513	46.128797	-89.874094	11	Muck	Pole				3	3																							
514	46.128302	-89.874095	9	Muck	Pole				0																								
515	46.127807	-89.874096	8	Muck	Pole				2			2																					
516	46.127312	-89.874097	7	Muck	Pole				1														1										
517	46.126817	-89.874098	5	Sand	Pole				2			1											1										
518	46.151567	-89.873329	8	Muck	Pole				2			2																					
519	46.151072	-89.873331	12	Sand	Pole				0																								
520	46.150577	-89.873332	15		Rope				0																								
521	46.150082	-89.873333	19			DEEP																											
522	46.149587	-89.873334	21			DEEP																											
523	46.149091	-89.873335	20			DEEP																											
524	46.148596	-89.873336	17			DEEP																											
525	46.148101	-89.873337	15		Rope				0																								15
526	46.147606	-89.873339	13		Rope				0																								
527	46.147111	-89.873340	10	Muck	Pole				0																								
528	46.145626	-89.873343	14	Sand	Pole				0																								
529	46.145131	-89.873344	24			DEEP																											
530	46.144636	-89.873345	0			DEEP																											
531	46.144141	-89.873347	0			DEEP																											
532	46.143646	-89.873348	0			DEEP																											
533	46.143151	-89.873349	0			DEEP																											
534	46.142656	-89.873350	0			DEEP																											
535	46.142161	-89.873351	0			DEEP																											
536	46.141666	-89.873352	0			DEEP																											
537	46.141171	-89.873353	0			DEEP																											
538	46.140676	-89.873354	0			DEEP																											
539	46.140181	-89.873356	0			DEEP																											
540	46.139686	-89.873357	11	Sand	Pole				0																								

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Ceratophyllum demersum	Chara spp.	Elodea canadensis	Heteranthera dubia	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Potamogeton amplifolius	Potamogeton foliosus	Potamogeton friesii	Potamogeton pusillus	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton zosteriformis	Sparganium fluctuans	Utricularia vulgaris	Vallisneria americana	Zizania palustris	Aquatic moss	Freshwater sponge	Filamentous algae	Najas guadalupensis
541	46.138201	-89.873360	0			DEEP																											
542	46.137706	-89.873361	0			DEEP																											
543	46.137211	-89.873362	0			DEEP																											
544	46.136716	-89.873364	0			DEEP																											
545	46.136221	-89.873365	0			DEEP																											
546	46.135726	-89.873366	0			DEEP																											
547	46.135231	-89.873367	0			DEEP																											
548	46.134736	-89.873368	0			DEEP																											
549	46.134241	-89.873369	0			DEEP																											
550	46.133746	-89.873370	0			DEEP																											
551	46.133251	-89.873371	0			DEEP																											
552	46.132756	-89.873373	0			DEEP																											
553	46.132261	-89.873374	0			DEEP																											
554	46.131766	-89.873375	14		Rope				0																								
555	46.131271	-89.873376	4	Sand	Pole				0																								
556	46.130776	-89.873377	9	Muck	Pole				0																								
557	46.130281	-89.873378	12	Sand	Pole				0																								
558	46.129786	-89.873379	11	Sand	Pole				0																								
559	46.129291	-89.873381	10	Sand	Pole				0																								
560	46.128796	-89.873382	12	Muck	Pole				0																								
561	46.128301	-89.873383	13	Muck	Pole				1			1																					
562	46.127806	-89.873384	3	Sand	Pole				0																								
563	46.151071	-89.872618	9	Muck	Pole				0																								
564	46.150576	-89.872620	13		Rope				1			1																					
565	46.150081	-89.872621	15		Rope				0																								
566	46.149586	-89.872622	18			DEEP																											
567	46.149091	-89.872623	19			DEEP																											
568	46.148596	-89.872624	18		Rope				0																								
569	46.148101	-89.872625	16		Rope				0																								
570	46.147606	-89.872626	15	Muck	Pole				0																								
571	46.147111	-89.872628	10	Muck	Pole				1			1																					
572	46.145626	-89.872631	6	Rock	Pole				0																								
573	46.145131	-89.872632	14		Rope				0																								
574	46.144636	-89.872633	0			DEEP																											
575	46.144141	-89.872634	0			DEEP																											
576	46.143646	-89.872636	0			DEEP																											
577	46.143151	-89.872637	0			DEEP																											
578	46.142656	-89.872638	0			DEEP																											
579	46.142161	-89.872639	0			DEEP																											
580	46.141666	-89.872640	0			DEEP																											
581	46.141171	-89.872641	0			DEEP																											
582	46.140676	-89.872642	0			DEEP																											
583	46.140181	-89.872643	13	Sand	Pole				0																								
584	46.139686	-89.872645	5	Sand	Pole				0																								
585	46.137706	-89.872649	0			DEEP																											
586	46.137211	-89.872650	0			DEEP																											
587	46.136716	-89.872651	0			DEEP																											
588	46.136221	-89.872653	0			DEEP																											
589	46.135726	-89.872654	0			DEEP																											
590	46.135231	-89.872655	0			DEEP																											
591	46.134736	-89.872656	0			DEEP																											
592	46.134241	-89.872657	0			DEEP																											
593	46.133746	-89.872658	0			DEEP																											
594	46.133251	-89.872659	0			DEEP																											

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Ceratophyllum demersum	Chara spp.	Elodea canadensis	Heteranthera dubia	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Potamogeton amplifolius	Potamogeton foliosus	Potamogeton friesii	Potamogeton pusillus	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton zosteriformis	Sparganium fluctuans	Utricularia vulgaris	Vallisneria americana	Zizania palustris	Aquatic moss	Freshwater sponge	Filamentous algae	Najas guadalupensis
595	46.132756	-89.872661	0			DEEP																											
596	46.132261	-89.872662	0			DEEP																											
597	46.131766	-89.872663	0			DEEP																											
598	46.131271	-89.872664	13	Sand					0																								
599	46.130776	-89.872665	12	Rock	Pole				0																								
600	46.130280	-89.872666	12	Sand	Pole				0																								
601	46.129785	-89.872667	11	Sand	Pole				0																								
602	46.129290	-89.872669	12	Muck	Pole				0																								
603	46.128795	-89.872670	9	Muck	Pole				0																								
604	46.128300	-89.872671	10	Muck	Pole				0																								
605	46.127805	-89.872672	8	Sand	Pole				0																								
606	46.150575	-89.871907	9	Muck	Pole				0																								
607	46.150080	-89.871908	11	Sand	Pole				0																								
608	46.149585	-89.871910	14	Muck	Pole				0																								
609	46.149090	-89.871911	14		Rope				0																								
610	46.148595	-89.871912	14		Rope				1			1																					
611	46.148100	-89.871913	14		Rope				0																								
612	46.147605	-89.871914	8	Muck	Pole				0																								
613	46.147110	-89.871915	5	Muck	Pole				2		1	1											2	1									
614	46.145130	-89.871920	12	Sand	Pole				0																								
615	46.144635	-89.871921	0			DEEP																											
616	46.144140	-89.871922	0			DEEP																											
617	46.143645	-89.871923	0			DEEP																											
618	46.143150	-89.871925	0			DEEP																											
619	46.142655	-89.871926	0			DEEP																											
620	46.142160	-89.871927	0			DEEP																											
621	46.141665	-89.871928	0			DEEP																											
622	46.141170	-89.871929	0			DEEP																											
623	46.140675	-89.871930	0			DEEP																											
624	46.140180	-89.871931	9	Sand	Pole				0																								
625	46.139685	-89.871933	5	Sand	Pole				0																								
626	46.138200	-89.871936	13	Sand	Pole				0																								
627	46.137705	-89.871937	0			DEEP																											
628	46.137210	-89.871938	0			DEEP																											
629	46.136715	-89.871939	0			DEEP																											
630	46.136220	-89.871941	0			DEEP																											
631	46.135725	-89.871942	0			DEEP																											
632	46.135230	-89.871943	0			DEEP																											
633	46.134735	-89.871944	0			DEEP																											
634	46.134240	-89.871945	0			DEEP																											
635	46.133745	-89.871946	0			DEEP																											
636	46.133250	-89.871947	0			DEEP																											
637	46.132755	-89.871949	0			DEEP																											
638	46.132260	-89.871950	0			DEEP																											
639	46.131765	-89.871951	0			DEEP																											
640	46.131270	-89.871952	0			DEEP																											
641	46.130775	-89.871953	0			DEEP																											
642	46.130280	-89.871954	14		Rope				0																								
643	46.129785	-89.871955	12	Sand	Pole				0																								
644	46.129290	-89.871957	9	Muck	Pole				0																								
645	46.128795	-89.871958	9	Muck	Pole				0																								
646	46.128300	-89.871959	10	Sand	Pole				0																								
647	46.127805	-89.871960	11	Sand	Pole				0																								
648	46.149089	-89.871199	7	Sand	Pole				0																								

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Ceratophyllum demersum	Chara spp.	Elodea canadensis	Heteranthera dubia	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Potamogeton amplifolius	Potamogeton foliosus	Potamogeton friesii	Potamogeton pusillus	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton zosteriformis	Sparganium fluctuans	Utricularia vulgaris	Vallisneria americana	Zizania palustris	Aquatic moss	Freshwater sponge	Filamentous algae	Najas guadalupensis
649	46.148594	-89.871200	10	Muck	Pole				1			1																					
650	46.147109	-89.871203	5	Muck	Pole				2			2	1		1								1					1					
651	46.145129	-89.871208	9	Sand	Pole				1								1																
652	46.144634	-89.871209	14		Rope				0																								
653	46.144139	-89.871210	0			DEEP																											
654	46.143644	-89.871211	0			DEEP																											
655	46.143149	-89.871212	0			DEEP																											
656	46.142654	-89.871214	0			DEEP																											
657	46.142159	-89.871215	14		Rope				0																								
658	46.141664	-89.871216	14	Rock	Pole				0																								
659	46.141169	-89.871217	14	Sand	Pole				0																								
660	46.140674	-89.871218	11	Sand	Pole				0																								
661	46.140179	-89.871219	7	Sand	Pole				0																								
662	46.139684	-89.871220	4	Sand	Pole				0																								
663	46.138694	-89.871223	8	Muck	Pole				0																								
664	46.137704	-89.871225	12	Sand	Pole				0																								
665	46.137209	-89.871226	0			DEEP																											
666	46.136714	-89.871227	0			DEEP																											
667	46.136219	-89.871229	0			DEEP																											
668	46.135724	-89.871230	0			DEEP																											
669	46.135229	-89.871231	0			DEEP																											
670	46.134734	-89.871232	0			DEEP																											
671	46.134239	-89.871233	0			DEEP																											
672	46.133744	-89.871234	0			DEEP																											
673	46.133249	-89.871235	0			DEEP																											
674	46.132754	-89.871237	0			DEEP																											
675	46.132259	-89.871238	0			DEEP																											
676	46.131764	-89.871239	0			DEEP																											
677	46.131269	-89.871240	14		Rope				0																								
678	46.130774	-89.871241	0			DEEP																											
679	46.130279	-89.871242	12	Sand	Pole				0																								
680	46.129784	-89.871244	8	Sand	Pole				0																								
681	46.129289	-89.871245	8	Sand	Pole				0																								
682	46.128794	-89.871246	9	Muck	Pole				0																								
683	46.128299	-89.871247	9	Sand	Pole				0																								
684	46.127804	-89.871248	10	Muck	Pole				0																								
685	46.145128	-89.870496	8	Sand	Pole				2					1		1							1										
686	46.144633	-89.870497	13	Sand	Pole				0																								
687	46.144138	-89.870498	0			DEEP																											
688	46.143643	-89.870499	0			DEEP																											
689	46.143148	-89.870500	0			DEEP																											
690	46.142653	-89.870501	15		Rope				0																								
691	46.142158	-89.870503	13	Sand	Pole				0																								
692	46.141663	-89.870504	5	Rock	Pole				0																								
693	46.140178	-89.870507	5	Sand	Pole				0																								
694	46.139683	-89.870508	8	Sand	Pole				0																								
695	46.139188	-89.870510	8	Rock	Pole				0																								
696	46.138693	-89.870511	13	Sand	Pole				0																								
697	46.138198	-89.870512	8	Sand	Pole				0																								
698	46.137703	-89.870513	7	Rock	Pole				0																								
699	46.137208	-89.870514	13		Rope				0																								
700	46.136713	-89.870515	0			DEEP																											
701	46.136218	-89.870516	0			DEEP																											
702	46.135723	-89.870518	0			DEEP																											

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Ceratophyllum demersum	Chara spp.	Elodea canadensis	Heteranthera dubia	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Potamogeton amplifolius	Potamogeton foliosus	Potamogeton friesii	Potamogeton pusillus	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton zosteriformis	Sparganium fluctuans	Utricularia vulgaris	Vallisneria americana	Zizania palustris	Aquatic moss	Freshwater sponge	Filamentous algae	Najas guadalupensis
703	46.135228	-89.870519	0			DEEP																											
704	46.134733	-89.870520	0			DEEP																											
705	46.134238	-89.870521	0			DEEP																											
706	46.133743	-89.870522	0			DEEP																											
707	46.133248	-89.870523	0			DEEP																											
708	46.132753	-89.870525	0			DEEP																											
709	46.132258	-89.870526	0			DEEP																											
710	46.131763	-89.870527	16		Rope				0																								
711	46.131268	-89.870528	11	Sand	Pole				0																								
712	46.130773	-89.870529	12	Rock	Pole				0																								
713	46.130278	-89.870530	7	Sand	Pole				0																							1	
714	46.129783	-89.870532	4	Sand	Pole				1							1								1									
715	46.128793	-89.870534	8	Muck	Pole				0																								
716	46.128298	-89.870535	11	Sand	Pole				0																								
717	46.127803	-89.870536	9	Muck	Pole				0																								
718	46.145622	-89.869782	2	Sand	Pole				1								1																
719	46.145127	-89.869783	9	Sand	Pole				0																								
720	46.144632	-89.869785	12	Sand	Pole				0																								
721	46.144137	-89.869786	0			DEEP																											
722	46.143642	-89.869787	0			DEEP																											
723	46.143147	-89.869788	15		Rope				0																								
724	46.142652	-89.869789	12	Sand	Pole				0																								
725	46.142157	-89.869790	3	Sand	Pole				0																								
726	46.140177	-89.869795	7	Sand	Pole				0																								
727	46.139682	-89.869796	9	Sand	Pole				0																						1		
728	46.139187	-89.869797	13	Muck	Pole				0																								
729	46.138692	-89.869799	12	Muck	Pole				0																								
730	46.138197	-89.869800	13	Muck	Pole				0																								
731	46.137702	-89.869801	14	Sand	Pole				0																								
732	46.137207	-89.869802	11	Rock	Pole				0																								
733	46.136712	-89.869803	0			DEEP																											
734	46.136217	-89.869804	0			DEEP																											
735	46.135722	-89.869806	0			DEEP																											
736	46.135227	-89.869807	0			DEEP																											
737	46.134732	-89.869808	0			DEEP																											
738	46.134237	-89.869809	0			DEEP																											
739	46.133742	-89.869810	0			DEEP																											
740	46.133247	-89.869811	0			DEEP																											
741	46.132752	-89.869813	0			DEEP																											
742	46.132257	-89.869814	0			DEEP																											
743	46.131762	-89.869815	0			DEEP																											
744	46.131267	-89.869816	11	Sand	Pole				0																								
745	46.130772	-89.869817	10	Sand	Pole				0																								
746	46.128792	-89.869822	7	Muck	Pole				0																								
747	46.128297	-89.869823	11	Sand	Pole				0																								
748	46.127802	-89.869824	7	Sand	Pole				0																								
749	46.145622	-89.869070	11	Sand	Pole				1								1																
750	46.145127	-89.869071	10	Sand	Pole				0																								
751	46.144632	-89.869072	13	Sand	Pole				0																								
752	46.144137	-89.869074	0			DEEP																											
753	46.143642	-89.869075	0			DEEP																											
754	46.143147	-89.869076	12	Sand	Pole				0																								
755	46.142652	-89.869077	1	Sand	Pole				0																								
756	46.140177	-89.869083	6	Muck	Pole				0																								

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Ceratophyllum demersum	Chara spp.	Elodea canadensis	Heteranthera dubia	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Potamogeton amplifolius	Potamogeton foliosus	Potamogeton friesii	Potamogeton pusillus	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton zosteriformis	Sparganium fluctuans	Utricularia vulgaris	Vallisneria americana	Zizania palustris	Aquatic moss	Freshwater sponge	Filamentous algae	Najas guadalupensis
757	46.139682	-89.869084	8	Sand	Pole				0																								
758	46.139187	-89.869085	8	Muck	Pole				0																								
759	46.138692	-89.869087	8	Muck	Pole				0																								
760	46.138197	-89.869088	13	Muck	Pole				0																								
761	46.137702	-89.869089	12	Muck	Pole				0																								
762	46.137207	-89.869090	9	Sand	Pole				0																								
763	46.136712	-89.869091	11	Rock	Pole				0																								
764	46.136217	-89.869092	14	Sand	Pole				0																								
765	46.135722	-89.869094	0			DEEP																											
766	46.135227	-89.869095	13	Rock	Pole				0																								
767	46.134732	-89.869096	15		Rope				0																								
768	46.134237	-89.869097	0			DEEP																											
769	46.133742	-89.869098	0			DEEP																											
770	46.133247	-89.869099	0			DEEP																											
771	46.132752	-89.869101	0			DEEP																											
772	46.132256	-89.869102	0			DEEP																											
773	46.131762	-89.869103	0			DEEP																											
774	46.131266	-89.869104	0			DEEP																											
775	46.130771	-89.869105	15		Rope				0																								
776	46.130276	-89.869106	1	Sand	Pole				0																								
777	46.128791	-89.869110	12	Sand	Pole				0																								
778	46.128296	-89.869111	8	Sand	Pole				0																								
779	46.127801	-89.869112	6	Muck	Pole				0																								
780	46.146116	-89.868357	4	Sand	Pole				1								1																
781	46.145621	-89.868358	15		Rope				0																								
782	46.145126	-89.868359	15		Rope				0																								
783	46.144631	-89.868360	23			DEEP																											
784	46.144136	-89.868361	13	Sand	Pole				0																								
785	46.143641	-89.868363	8	Sand	Pole				0																								
786	46.140671	-89.868370	7	Sand	Pole				0																								
787	46.140176	-89.868371	7	Muck	Pole				0																								
788	46.139681	-89.868372	7	Sand	Pole				0																								
789	46.139186	-89.868373	7	Muck	Pole				0																								
790	46.138691	-89.868374	8	Muck	Pole				0																								
791	46.138196	-89.868376	10	Sand	Pole				0																								
792	46.137701	-89.868377	8	Sand	Pole				0																								
793	46.137206	-89.868378	3	Sand	Pole				0																								
794	46.136216	-89.868380	4	Sand	Pole				0																								
795	46.135721	-89.868382	4	Sand	Pole				0																								
796	46.135226	-89.868383	4	Sand	Pole				0																								
797	46.134731	-89.868384	5	Rock	Pole				0																								
798	46.134236	-89.868385	15		Rope				0																								
799	46.133741	-89.868386	0			DEEP																											
800	46.133246	-89.868387	0			DEEP																											
801	46.132751	-89.868389	0			DEEP																											
802	46.132256	-89.868390	0			DEEP																											
803	46.131761	-89.868391	0			DEEP																											
804	46.131266	-89.868392	0			DEEP																											
805	46.130771	-89.868393	0			DEEP																											
806	46.130276	-89.868394	13	Sand	Pole				0																								
807	46.129286	-89.868397	13	Sand	Pole				0																								
808	46.128791	-89.868398	8	Muck	Pole				0																								
809	46.128296	-89.868399	7	Muck	Pole				0																								
810	46.127801	-89.868400	7	Muck	Pole				0																								

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Ceratophyllum demersum	Chara spp.	Elodea canadensis	Heteranthera dubia	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Potamogeton amplifolius	Potamogeton foliosus	Potamogeton friesii	Potamogeton pusillus	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton zosteriformis	Sparganium fluctuans	Utricularia vulgaris	Vallisneria americana	Zizania palustris	Aquatic moss	Freshwater sponge	Filamentous algae	Najas guadalupensis
811	46.146115	-89.867645	10	Sand	Pole				1								1																
812	46.145620	-89.867646	17			DEEP																											
813	46.145125	-89.867647	20			DEEP																											
814	46.144630	-89.867648	11	Sand	Pole				0																								
815	46.144135	-89.867649	7	Sand	Pole				0																								
816	46.140670	-89.867658	7	Muck	Pole				0																								
817	46.140175	-89.867659	7	Muck	Pole				0																								
818	46.139680	-89.867660	5	Sand	Pole				0																								
819	46.138195	-89.867664	2	Rock	Pole				0																								
820	46.137700	-89.867665	6	Sand	Pole				0																								
821	46.134235	-89.867673	15		Rope				0																								
822	46.133740	-89.867674	0			DEEP																											
823	46.133245	-89.867675	0			DEEP																											
824	46.132750	-89.867677	0			DEEP																											
825	46.132255	-89.867678	0			DEEP																											
826	46.131760	-89.867679	0			DEEP																											
827	46.131265	-89.867680	0			DEEP																											
828	46.130770	-89.867681	0			DEEP																											
829	46.130275	-89.867683	0			DEEP																											
830	46.129780	-89.867684	12	Sand	Pole				0																								
831	46.129285	-89.867685	12	Sand	Pole				0																								
832	46.128790	-89.867686	7	Sand	Pole				0																								
833	46.146114	-89.866932	12	Sand	Pole				0																								
834	46.145619	-89.866934	18			DEEP																											
835	46.145124	-89.866935	18			DEEP																											
836	46.144629	-89.866936	14	Sand	Pole				0																								
837	46.140174	-89.866947	5	Sand	Pole				0																								
838	46.139679	-89.866948	1	Sand	Pole				1			1																					
839	46.134234	-89.866961	13	Sand	Pole				0																								
840	46.133739	-89.866962	0			DEEP																											
841	46.133244	-89.866963	0			DEEP																											
842	46.132749	-89.866965	0			DEEP																											
843	46.132254	-89.866966	0			DEEP																											
844	46.131759	-89.866967	0			DEEP																											
845	46.131264	-89.866968	0			DEEP																											
846	46.130769	-89.866969	15		Rope				0																								
847	46.130274	-89.866971	0			DEEP																											
848	46.129779	-89.866972	12	Sand	Pole				0																								
849	46.146113	-89.866220	3	Sand	Pole				0																								
850	46.145618	-89.866221	17			DEEP																											
851	46.145123	-89.866223	16			DEEP																											
852	46.144628	-89.866224	17			DEEP																											
853	46.144133	-89.866225	8	Sand	Pole				0																								
854	46.134233	-89.866249	13	Sand	Pole				0																								
855	46.133738	-89.866250	0			DEEP																											
856	46.133243	-89.866251	0			DEEP																											
857	46.132748	-89.866253	0			DEEP																											
858	46.132253	-89.866254	0			DEEP																											
859	46.131758	-89.866255	0			DEEP																											
860	46.131263	-89.866256	14		Rope				0																								
861	46.130273	-89.866259	12	Sand	Pole				0																								
862	46.129778	-89.866260	3	Sand	Pole				0																								
863	46.145618	-89.865509	5	Sand	Pole				0								1																
864	46.145123	-89.865510	10	Sand	Pole				0																								

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Ceratophyllum demersum	Chara spp.	Elodea canadensis	Heteranthera dubia	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Potamogeton amplifolius	Potamogeton foliosus	Potamogeton friesii	Potamogeton pusillus	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton zosteriformis	Sparganium fluctuans	Utricularia vulgaris	Vallisneria americana	Zizania palustris	Aquatic moss	Freshwater sponge	Filamentous algae	Najas guadalupensis
865	46.144628	-89.865512	13	Muck	Pole				0																								
866	46.134232	-89.865537	10	Sand	Pole				0																								
867	46.133737	-89.865538	0			DEEP																											
868	46.133242	-89.865539	0			DEEP																											
869	46.132747	-89.865541	0			DEEP																											
870	46.132252	-89.865542	0			DEEP																											
871	46.131757	-89.865543	0			DEEP																											
872	46.131262	-89.865544	1	Rock	Pole				0																								
873	46.130272	-89.865547	3	Sand	Pole				1																			1					
874	46.133737	-89.864826	0			DEEP																											
875	46.133242	-89.864827	16		Rope				0																								
876	46.132747	-89.864829	0			DEEP																											
877	46.132252	-89.864830	14		Rope				0																								
878	46.131757	-89.864831	6	Sand	Pole				0																								
879	46.131756	-89.864119	5	Sand	Pole				2										1				1		1								

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Ceratophyllum demersum	Chara spp.	Elodea canadensis	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Potamogeton gramineus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton zosteriformis	Utricularia vulgaris	Vallisneria americana	Zizania palustris	Filamentous algae	Sagittaria cuneata	Potamogeton obtusifolius
1	529276	630974	4	Rock	Pole				0																		
2	529301	631024	0			TERRESTRIAL																					
3	529301	630999	4	Sand	Pole				1											1							
4	529326	631049	3	Sand	Pole				2	1		1											1			2	
5	529326	631024	4	Sand	Pole				1		1	1	1								1						
6	529326	630999	5	Sand	Pole				1														1				
7	529351	631074	3	Sand	Pole				1	1		1													1		
8	529351	631049	5	Muck	Pole				3	3		1									1	1					
9	529351	631024	5	Muck	Pole				3	2		1	1		1					1							
10	529376	631074	4	Muck	Pole				1	1															2		
11	529376	631049	4	Muck	Pole				1	1															1		
12	529376	631024	5	Muck	Pole				1	1			1								1				1		
13	529401	631074	4	Muck	Pole				1			1													1		
14	529401	631049	2	Sand	Pole				1								1										
15	529401	631024	5	Muck	Pole				1	1															2		
16	529426	631099	3	Sand	Pole				3			1						1	1				1			1	
17	529426	631074	4	Muck	Pole				0																2		
18	529426	631024	5	Muck	Pole				1			1															
19	529451	631099	3	Muck	Pole			YES	1							1									1		
20	529451	631074	5	Muck	Pole			YES	1			1									1						
21	529451	631024	6	Muck	Pole				1			1									1						
22	529476	631124	0			NONNAVIGABLE (PLANTS)																					
23	529476	631099	4	Muck	Pole				1												1				3		
24	529476	631074	0			NONNAVIGABLE (PLANTS)																					
25	529476	631024	6	Muck	Pole				1	1				1													
26	529476	630999	7	Muck	Pole				0																		
27	529501	631124	0			NONNAVIGABLE (PLANTS)																					
28	529501	631099	5	Muck	Pole				0																1		
29	529501	630999	7	Muck	Pole				2					1						1							
30	529526	631149	0			NONNAVIGABLE (PLANTS)																					
31	529526	631124	4	Muck	Pole				0																3		
32	529526	631099	0			NONNAVIGABLE (PLANTS)																					
33	529526	630974	5	Sand	Pole				2			2				1											
34	529551	631174	0			NONNAVIGABLE (PLANTS)																					
35	529551	631149	5	Muck	Pole				1	1		1									1				3		
36	529551	631124	4	Muck	Pole				1			1									1				2		
37	529576	631174	4	Muck	Pole				1												1				1		
38	529576	631149	0			NONNAVIGABLE (PLANTS)																					
39	529576	631124	0			NONNAVIGABLE (PLANTS)																					
40	529601	631199	0			NONNAVIGABLE (PLANTS)																					
41	529601	631174	4	Muck	Pole				1												1				3		
42	529601	631149	0			NONNAVIGABLE (PLANTS)																					
43	529626	631199	4	Muck	Pole				0																2		
44	529626	631174	0			NONNAVIGABLE (PLANTS)																					
45	529626	631149	0			NONNAVIGABLE (PLANTS)																					

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Ceratophyllum demersum	Chara spp.	Elodea canadensis	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Potamogeton gramineus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton zosteriformis	Utricularia vulgaris	Vallisneria americana	Zizania palustris	Filamentous algae	Sagittaria cuneata	Potamogeton obtusifolius
46	529651	631199	4	Muck	Pole				2	1											1				2		
47	529651	631174	0			NONNAVIGABLE (PLANTS)																					
48	529651	631149	0			NONNAVIGABLE (PLANTS)																					
49	529676	631199	3	Muck	Pole				1	1											1			1	2		
50	529676	631174	0			NONNAVIGABLE (PLANTS)																					
51	529676	631149	0			NONNAVIGABLE (PLANTS)																					
52	529676	631124	0			NONNAVIGABLE (PLANTS)																					
53	529701	631199	4	Muck	Pole				2	1		1												1			1
54	529701	631174	0			NONNAVIGABLE (PLANTS)																					
55	529701	631149	0			NONNAVIGABLE (PLANTS)																					
56	529726	631224	0			NONNAVIGABLE (PLANTS)																					
57	529726	631199	4	Muck	Pole				1	1															2		
58	529726	631174	0			NONNAVIGABLE (PLANTS)																					
59	529726	631149	0			NONNAVIGABLE (PLANTS)																					
60	529726	631124	0			NONNAVIGABLE (PLANTS)																					
61	529751	631224	0			NONNAVIGABLE (PLANTS)																					
62	529751	631199	3	Muck	Pole				1					1										1	2		
63	529751	631174	0			NONNAVIGABLE (PLANTS)																					
64	529751	631149	0			NONNAVIGABLE (PLANTS)																					
65	529751	631124	0			NONNAVIGABLE (PLANTS)																					
66	529776	631249	0			NONNAVIGABLE (PLANTS)																					
67	529776	631224	0			NONNAVIGABLE (PLANTS)																					
68	529776	631199	0			NONNAVIGABLE (PLANTS)																					
69	529776	631174	0			NONNAVIGABLE (PLANTS)																					
70	529776	631149	0			NONNAVIGABLE (PLANTS)																					
71	529801	631249	0			NONNAVIGABLE (PLANTS)																					
72	529801	631224	3	Muck	Pole				1	1															2		
73	529801	631199	0			NONNAVIGABLE (PLANTS)																					
74	529801	631174	0			NONNAVIGABLE (PLANTS)																					
75	529801	631149	0			NONNAVIGABLE (PLANTS)																					
76	529826	631249	0			NONNAVIGABLE (PLANTS)																					
77	529826	631224	0			NONNAVIGABLE (PLANTS)																					
78	529826	631199	0			NONNAVIGABLE (PLANTS)																					
79	529826	631174	0			NONNAVIGABLE (PLANTS)																					
80	529851	631249	0			NONNAVIGABLE (PLANTS)																					
81	529851	631224	0			NONNAVIGABLE (PLANTS)																					
82	529851	631199	0			NONNAVIGABLE (PLANTS)																					
83	529851	631174	0			NONNAVIGABLE (PLANTS)																					
84	529876	631224	0			NONNAVIGABLE (PLANTS)																					
85	529876	631199	0			NONNAVIGABLE (PLANTS)																					

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Potamogeton crispus	Ceratophyllum demersum	Chara spp.	Elatine minima	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Equisetum fluviatile	Heteranthera dubia	Bidens beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton gramineus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria cristata	Sagittaria rigida	Schoenoplectus acutus	Schoenoplectus tabernaemontani	Sparganium eurycarpum	Utricularia vulgaris	Vallisneria americana	Filamentous algae	Sagittaria cuneata	Callitriche palustris
1	46.116760	-89.837560	11	Sand	Pole				0																																		
2	46.116445	-89.837561	11	Sand	Pole				0																																		
3	46.116130	-89.837562	9	Sand	Pole				0																																		
4	46.116759	-89.837107	12	Sand	Pole				0																																		
5	46.116444	-89.837108	0			DEEP																																				
6	46.116129	-89.837109	18			DEEP																																				
7	46.115814	-89.837110	10	Sand	Pole				0																																		
8	46.117074	-89.836653	11	Rock	Pole				0																																		
9	46.116759	-89.836654	0			DEEP																																				
10	46.116444	-89.836655	20			DEEP																																				
11	46.116129	-89.836656	0			DEEP																																				
12	46.115814	-89.836657	9	Rock	Pole				0																																		
13	46.117073	-89.836200	18			DEEP																																				
14	46.116758	-89.836201	0			DEEP																																				
15	46.116443	-89.836202	0			DEEP																																				
16	46.116128	-89.836203	15		Rope				0																																		
17	46.115813	-89.836204	2	Rock	Pole				0																																		
18	46.117072	-89.835747	20			DEEP																																				
19	46.116757	-89.835748	0			DEEP																																				
20	46.116442	-89.835749	17			DEEP																																				
21	46.116127	-89.835750	7	Sand	Pole				0																																		
22	46.117072	-89.835294	20			DEEP																																				
23	46.116757	-89.835295	0			DEEP																																				
24	46.116442	-89.835296	10	Rock	Pole				0																																		
25	46.117701	-89.834840	6	Rock	Pole				0																																		
26	46.117386	-89.834840	18			DEEP																																				
27	46.117071	-89.834841	20			DEEP																																				
28	46.116756	-89.834842	20			DEEP																																				
29	46.116441	-89.834843	4	Sand	Pole				0																																		
30	46.118015	-89.834386	7	Rock	Pole				0																																		
31	46.117700	-89.834387	0			DEEP																																				
32	46.117385	-89.834387	0			DEEP																																				
33	46.117070	-89.834388	20			DEEP																																				
34	46.116755	-89.834389	8	Sand	Pole				0																																		
35	46.118330	-89.833932	0			DOCK																																				
36	46.118015	-89.833933	0			DEEP																																				
37	46.117700	-89.833934	0			DEEP																																				
38	46.117385	-89.833935	0			DEEP																																				
39	46.117070	-89.833935	4	Sand	Pole				0																																		
40	46.118959	-89.833477	3	Sand	Pole				1													1																					
41	46.118644	-89.833478	10	Sand	Pole				0																																		
42	46.118329	-89.833479	0			DEEP																																				
43	46.118014	-89.833480	0			DEEP																																				
44	46.117699	-89.833481	0			DEEP																																				
45	46.117384	-89.833482	13		Rope				0																																		
46	46.117069	-89.833483	3	Rock	Pole				0																																		
47	46.118958	-89.833024	9	Sand	Pole				0																																		
48	46.118643	-89.833025	0			DEEP																																				
49	46.118328	-89.833026	0			DEEP																																				
50	46.118013	-89.833027	0			DEEP																																				
51	46.117698	-89.833028	0			DEEP																																				
52	46.117383	-89.833029	11	Sand	Pole				0																																		
53	46.117068	-89.833030	10	Sand	Pole				0																																		
54	46.116753	-89.833031	0	Rock	Pole				0																																		
55	46.119273	-89.832570	7	Sand	Pole				1													1				1																	
56	46.118958	-89.832571	14		Rope				0																																		
57	46.118643	-89.832572	0			DEEP																																				
58	46.118328	-89.832573	0			DEEP																																				
59	46.118013	-89.832574	0			DEEP																																				
60	46.117698	-89.832575	15		Rope				0																																		
61	46.117383	-89.832576	0			DEEP																																				
62	46.117068	-89.832577	14		Rope				0																																		
63	46.119587	-89.832116	3	Sand	Pole				1													1																					
64	46.119272	-89.832117	12	Sand	Pole				0																																		
65	46.118957	-89.832118	0			DEEP																																				
66	46.118642	-89.832119	0			DEEP																																				
67	46.118327	-89.832120	0			DEEP																																				
68	46.118012	-89.832121	0			DEEP																																				

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Potamogeton crispus	Ceratophyllum demersum	Chara spp.	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Equisetum fluviatile	Heteranthera dubia	Bidens beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton gramineus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria cristata	Sagittaria rigida	Schoenoplectus acutus	Schoenoplectus tabernaemontani	Sparganium eurycarpum	Utricularia vulgaris	Vallisneria americana	Filamentous algae	Sagittaria cuneata	Callitriche palustris
69	46.117697	-89.832122	0			DEEP																																				
70	46.117382	-89.832123	0			DEEP																																				
71	46.117067	-89.832124	18			DEEP																																				
72	46.119901	-89.831662	5	Sand	Pole				1											1													1									
73	46.119586	-89.831663	9	Muck	Pole				0																																	
74	46.119271	-89.831664	13		Rope				0																																	
75	46.118956	-89.831665	0			DEEP																																				
76	46.118641	-89.831666	0			DEEP																																				
77	46.118326	-89.831667	0			DEEP																																				
78	46.118011	-89.831668	0			DEEP																																				
79	46.117696	-89.831669	0			DEEP																																				
80	46.117381	-89.831670	0			DEEP																																				
81	46.117066	-89.831671	16			DEEP																																				
82	46.116436	-89.831673	2	Rock	Pole				1											1										1												
83	46.116121	-89.831674	1	Sand	Pole				0																																	
84	46.115491	-89.831675	0	Rock	Pole				0																																	
85	46.115176	-89.831676	6	Muck	Pole				3															1			1	2										1			
86	46.114861	-89.831677	5	Sand	Pole				1																			1										0	1		
87	46.120531	-89.831207	0			DOCK																																				
88	46.120216	-89.831208	4	Sand	Pole				2																2									1								
89	46.119901	-89.831209	8	Muck	Pole				0																																	
90	46.119586	-89.831210	10	Sand	Pole				0																																	
91	46.119271	-89.831211	0			DEEP																																				
92	46.118956	-89.831212	0			DEEP																																				
93	46.118641	-89.831213	0			DEEP																																				
94	46.118326	-89.831214	0			DEEP																																				
95	46.118011	-89.831215	0			DEEP																																				
96	46.117696	-89.831216	0			DEEP																																				
97	46.117381	-89.831217	0			DEEP																																				
98	46.117066	-89.831218	13		Rope				0																																	
99	46.116751	-89.831219	3	Rock	Pole				0																																	
100	46.116436	-89.831220	7	Sand	Pole				1											1									1												
101	46.116121	-89.831221	6	Sand	Pole				0																																	
102	46.115806	-89.831222	8	Sand	Pole				0																																	
103	46.115491	-89.831223	9	Muck	Pole				3		2				2													1												
104	46.115176	-89.831223	7	Muck	Pole				1									1						1															1			
105	46.114861	-89.831224	6	Sand	Pole				2															1				1											2			
106	46.120845	-89.830753	5	Sand	Pole				2											2										1												
107	46.120530	-89.830754	8	Muck	Pole				2						1					2										1												
108	46.120215	-89.830755	9	Muck	Pole				0																																	
109	46.119900	-89.830756	11	Muck	Pole				0																																	
110	46.119585	-89.830757	15		Rope				0																																	
111	46.119270	-89.830758	0			DEEP																																				
112	46.118955	-89.830759	0			DEEP																																				
113	46.118640	-89.830760	0			DEEP																																				
114	46.118325	-89.830761	0			DEEP																																				
115	46.118010	-89.830762	0			DEEP																																				
116	46.117695	-89.830763	0			DEEP																																				
117	46.117380	-89.830764	0			DEEP																																				
118	46.117065	-89.830765	12	Sand	Pole				0																																	
119	46.116750	-89.830766	9	Sand	Pole				0																																	
120	46.116435	-89.830767	10	Sand	Pole				0																																	
121	46.116120	-89.830768	9	Sand	Pole				0																																	
122	46.115805	-89.830769	7	Sand	Pole				0																																	
123	46.115490	-89.830770	7	Muck	Pole				3															2															1			
124	46.115175	-89.830771	5	Sand	Pole				2															1															1			
125	46.121159	-89.830299	10	Muck	Pole				0																																	
126	46.120844	-89.830300	14		Rope				0																																	
127	46.120529	-89.830301	14		Rope				0																																	
128	46.120214	-89.830302	14		Rope				0																																	
129	46.119899	-89.830303	0			DEEP																																				
130	46.119584	-89.830304	0			DEEP																																				
131	46.119269	-89.830305	0			DEEP																																				
132	46.118954	-89.830306	0			DEEP																																				
133	46.118639	-89.830307	0			DEEP																																				
134	46.118324	-89.830308	0			DEEP																																				
135	46.118009	-89.830309	0			DEEP																																				
136	46.117694	-89.830310	0			DEEP																																				

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Potamogeton crispus	Ceratophyllum demersum	Chara spp.	Elatine minima	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Equisetum fluviatile	Heteranthera dubia	Bidens beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton gramineus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria cristata	Sagittaria rigida	Schoenoplectus acutus	Schoenoplectus tabernaemontani	Sparganium eurycarpum	Utricularia vulgaris	Vallisneria americana	Filamentous algae	Sagittaria cuneata	Callitriche palustris
137	46.117379	-89.830311	23			DEEP																																					
138	46.117064	-89.830312	15		Rope				0																																			
139	46.116749	-89.830313	24			DEEP																																					
140	46.116434	-89.830314	25			DEEP																																					
141	46.116119	-89.830315	0			DEEP																																					
142	46.115804	-89.830316	13	Sand	Pole				0																																		
143	46.115489	-89.830317	6	Sand	Pole				0																																		
144	46.121474	-89.829845	10	Muck	Pole				0																																		
145	46.121159	-89.829846	0			DEEP																																	2					
146	46.120844	-89.829847	0			DEEP																																					
147	46.120529	-89.829848	0			DEEP																																					
148	46.120214	-89.829849	0			DEEP																																					
149	46.119899	-89.829850	0			DEEP																																					
150	46.119584	-89.829851	0			DEEP																																					
151	46.119269	-89.829852	0			DEEP																																					
152	46.118954	-89.829853	0			DEEP																																					
153	46.118639	-89.829854	0			DEEP																																					
154	46.118324	-89.829855	0			DEEP																																					
155	46.118009	-89.829856	0			DEEP																																					
156	46.117694	-89.829857	0			DEEP																																					
157	46.117379	-89.829858	19			DEEP																																					
158	46.117064	-89.829859	23			DEEP																																					
159	46.116749	-89.829860	0			DEEP																																					
160	46.116434	-89.829861	0			DEEP																																					
161	46.116119	-89.829862	0			DEEP																																					
162	46.115804	-89.829863	22			DEEP																																					
163	46.115489	-89.829864	5	Sand	Pole				0																																		
164	46.121473	-89.829392	10	Rock	Pole				0																																		
165	46.121158	-89.829393	0			DEEP																																					
166	46.120843	-89.829394	0			DEEP																																					
167	46.120528	-89.829395	0			DEEP																																					
168	46.120213	-89.829396	0			DEEP																																					
169	46.119898	-89.829397	0			DEEP																																					
170	46.119583	-89.829398	0			DEEP																																					
171	46.119268	-89.829399	0			DEEP																																					
172	46.118953	-89.829400	0			DEEP																																					
173	46.118638	-89.829401	0			DEEP																																					
174	46.118323	-89.829402	0			DEEP																																					
175	46.118008	-89.829403	0			DEEP																																					
176	46.117693	-89.829404	0			DEEP																																					
177	46.117378	-89.829405	0			DEEP																																					
178	46.117063	-89.829406	0			DEEP																																					
179	46.116748	-89.829407	0			DEEP																																					
180	46.116433	-89.829408	0			DEEP																																					
181	46.116118	-89.829409	0			DEEP																																					
182	46.115803	-89.829410	0			DEEP																																					
183	46.115488	-89.829411	0			DOCK																																					
184	46.121787	-89.828938	2	Sand	Pole				1					1							1	1				1																	
185	46.121472	-89.828939	10	Rock	Pole				0																																		
186	46.121157	-89.828940	0			DEEP																																					
187	46.120842	-89.828941	17			DEEP																																					
188	46.120527	-89.828942	0			DEEP																																					
189	46.120212	-89.828943	0			DEEP																																					
190	46.119897	-89.828944	0			DEEP																																					
191	46.119582	-89.828945	0			DEEP																																					
192	46.119267	-89.828946	0			DEEP																																					
193	46.118952	-89.828947	0			DEEP																																					
194	46.118637	-89.828948	0			DEEP																																					
195	46.118322	-89.828949	0			DEEP																																					
196	46.118007	-89.828950	0			DEEP																																					
197	46.117692	-89.828951	0			DEEP																																					
198	46.117377	-89.828952	13		Rope				0																																		
199	46.117062	-89.828953	0			DEEP																																					
200	46.116747	-89.828954	0			DEEP																																					
201	46.116432	-89.828955	0			DEEP																																					
202	46.116117	-89.828956	0			DEEP																																					
203	46.115802	-89.828957	4	Sand	Pole				0																																		
204	46.121787	-89.828485	2	Sand	Pole				2					1							2								1													

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Potamogeton crispus	Ceratophyllum demersum	Chara spp.	Eliatine minima	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Equisetum fluviatile	Heteranthera dubia	Bidens beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton gramineus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria cristata	Sagittaria rigida	Schoenoplectus acutus	Schoenoplectus tabernaemontani	Sparganium eurycarpum	Utricularia vulgaris	Vallisneria americana	Filamentous algae	Sagittaria cuneata	Callitriche palustris
205	46.121472	-89.828486	11	Rock	Pole				0																																		
206	46.121157	-89.828487	12	Sand	Pole				0																																		
207	46.120527	-89.828489	9	Sand	Pole				0																																		
208	46.120212	-89.828490	16			DEEP																																				
209	46.119897	-89.828491	0			DEEP																																				
210	46.119582	-89.828492	0			DEEP																																				
211	46.119267	-89.828493	0			DEEP																																				
212	46.118952	-89.828494	0			DEEP																																				
213	46.118637	-89.828495	0			DEEP																																				
214	46.118322	-89.828496	0			DEEP																																				
215	46.118007	-89.828497	0			DEEP																																				
216	46.117692	-89.828498	0			DEEP																																				
217	46.117377	-89.828499	15		Rope				0																																		
218	46.117062	-89.828500	10	Sand	Pole				0																																		
219	46.116747	-89.828501	10	Sand	Pole				0																																		
220	46.116432	-89.828502	9	Sand	Pole				1										1										1											1			
221	46.121786	-89.828032	9	Rock	Pole				0																																		
222	46.121471	-89.828033	10	Sand	Pole				0																																		
223	46.120526	-89.828036	0			TERRESTRIAL																																					
224	46.120211	-89.828037	12	Rock	Pole				0																																		
225	46.119896	-89.828038	0			DEEP																																				
226	46.119581	-89.828039	0			DEEP																																				
227	46.119266	-89.828040	0			DEEP																																				
228	46.118951	-89.828041	0			DEEP																																				
229	46.118636	-89.828042	0			DEEP																																				
230	46.118321	-89.828043	0			DEEP																																				
231	46.118006	-89.828044	0			DEEP																																				
232	46.117691	-89.828045	0			DEEP																																				
233	46.117376	-89.828046	0			DEEP																																				
234	46.117061	-89.828047	0			DEEP																																				
235	46.116746	-89.828048	5	Sand	Pole				1																1															1			
236	46.116431	-89.828049	3	Sand	Pole				1							1			1														1						1			
237	46.116116	-89.828050	4	Muck	Pole				2			1				1														1								2			
238	46.120525	-89.827583	5	Sand	Pole				1												1				1																
239	46.120210	-89.827584	11	Rock	Pole				0																																		
240	46.119895	-89.827585	0			DEEP																																				
241	46.119580	-89.827586	0			DEEP																																				
242	46.119265	-89.827587	0			DEEP																																				
243	46.118950	-89.827588	0			DEEP																																				
244	46.118635	-89.827589	0			DEEP																																				
245	46.118320	-89.827590	0			DEEP																																				
246	46.118005	-89.827591	0			DEEP																																				
247	46.117690	-89.827592	0			DEEP																																				
248	46.117375	-89.827593	0			DEEP																																				
249	46.117060	-89.827594	13		Rope				0																																		
250	46.116745	-89.827595	4	Rock	Pole				0																																		
251	46.116430	-89.827596	5	Muck	Pole				1																					1											1			
252	46.116115	-89.827597	5	Muck	Pole				2			2				1																1							1			
253	46.120525	-89.827130	6	Muck	Pole				1																					1												
254	46.120210	-89.827131	4	Rock	Pole				0																																		
255	46.119895	-89.827132	0			DEEP																																				
256	46.119580	-89.827133	0			DEEP																																				
257	46.119265	-89.827134	0			DEEP																																				
258	46.118950	-89.827135	0			DEEP																																				
259	46.118635	-89.827136	0			DEEP																																				
260	46.118320	-89.827137	0			DEEP																																				
261	46.118005	-89.827138	0			DEEP																																				
262	46.117690	-89.827139	0			DEEP																																				
263	46.117375	-89.827140	0			DEEP																																				
264	46.117060	-89.827141	9	Rock	Pole				0																																		
265	46.116430	-89.827143	4	Muck	Pole				1										1	1														1						1			
266	46.120209	-89.826678	4	Rock	Pole				0																																		
267	46.119894	-89.826679	0			DEEP																																				
268	46.119579	-89.826680	0			DEEP																																				
269	46.119264	-89.826681	0			DEEP																																				
270	46.118949	-89.826682	0			DEEP																																				
271	46.118634	-89.826683	0			DEEP																																				
272	46.118319	-89.826684	0			DEEP																																				

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Potamogeton crispus	Ceratophyllum demersum	Chara spp.	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Equisetum fluviatile	Heteranthera dubia	Bidens beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton gramineus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria cristata	Sagittaria rigida	Schoenoplectus acutus	Schoenoplectus tabernaemontani	Sparganium eurycarpum	Utricularia vulgaris	Vallisneria americana	Filamentous algae	Sagittaria cuneata	Callitriche palustris
273	46.118004	-89.826685	0			DEEP																																				
274	46.117689	-89.826686	0			DEEP																																				
275	46.117374	-89.826687	0			DEEP																																				
276	46.117059	-89.826688	15		Rope				0																																	
277	46.116744	-89.826689	0	Rock	Pole				0																																	
278	46.116429	-89.826690	0			TERRESTRIAL																																				
279	46.116114	-89.826691	0	Sand	Pole				0																																	
280	46.115169	-89.826694	1	Sand	Pole				1						1																											
281	46.120208	-89.826225	11	Sand	Pole				0																																	
282	46.119893	-89.826226	0			DEEP																																				
283	46.119578	-89.826227	0			DEEP																																				
284	46.119263	-89.826228	0			DEEP																																				
285	46.118948	-89.826229	0			DEEP																																				
286	46.118633	-89.826230	0			DEEP																																				
287	46.118318	-89.826231	0			DEEP																																				
288	46.118003	-89.826232	0			DEEP																																				
289	46.117688	-89.826233	0			DEEP																																				
290	46.117373	-89.826234	0			DEEP																																				
291	46.117058	-89.826235	0			DEEP																																				
292	46.116743	-89.826236	0			DEEP																																				
293	46.116428	-89.826237	15		Rope				0																																	
294	46.116113	-89.826238	0			DEEP																																				
295	46.115798	-89.826239	10	Rock	Pole				0																																	
296	46.115483	-89.826240	7	Sand	Pole				0																																	
297	46.115168	-89.826241	1	Rock	Pole				0																																	
298	46.120523	-89.825771	6	Sand	Pole				2								1				1			1		1	2														
299	46.120208	-89.825772	0			DEEP																																				
300	46.119893	-89.825773	0			DEEP																																				
301	46.119578	-89.825774	0			DEEP																																				
302	46.119263	-89.825775	0			DEEP																																				
303	46.118948	-89.825776	0			DEEP																																				
304	46.118633	-89.825777	0			DEEP																																				
305	46.118318	-89.825778	0			DEEP																																				
306	46.118003	-89.825779	0			DEEP																																				
307	46.117688	-89.825780	0			DEEP																																				
308	46.117373	-89.825781	0			DEEP																																				
309	46.117058	-89.825782	0			DEEP																																				
310	46.116743	-89.825783	0			DEEP																																				
311	46.116428	-89.825784	0			DEEP																																				
312	46.116113	-89.825785	0			DEEP																																				
313	46.115798	-89.825786	0			DEEP																																				
314	46.115483	-89.825787	0			DEEP																																				
315	46.115168	-89.825788	6	Sand	Pole				0																																	
316	46.123042	-89.825310	3	Sand	Pole				0																																	
317	46.122727	-89.825311	5	Sand	Pole				1										1																						1			
318	46.120522	-89.825318	9	Muck	Pole				0																																	
319	46.120207	-89.825319	0			DEEP																																				
320	46.119892	-89.825320	0			DEEP																																				
321	46.119577	-89.825321	0			DEEP																																				
322	46.119262	-89.825322	0			DEEP																																				
323	46.118947	-89.825323	0			DEEP																																				
324	46.118632	-89.825324	0			DEEP																																				
325	46.118317	-89.825325	0			DEEP																																				
326	46.118002	-89.825326	0			DEEP																																				
327	46.116742	-89.825330	0			DEEP																																				
328	46.116427	-89.825331	0			DEEP																																				
329	46.116112	-89.825332	0			DEEP																																				
330	46.115797	-89.825333	0			DEEP																																				
331	46.115482	-89.825334	0			DEEP																																				
332	46.115167	-89.825335	0			DEEP																																				
333	46.114852	-89.825336	3	Rock	Pole				0																																	
334	46.123356	-89.824856	8	Rock	Pole				0																																	
335	46.123041	-89.824857	10	Sand	Pole				0																																	
336	46.122726	-89.824858	14		Rope				0																																	
337	46.122411	-89.824859	10	Sand	Pole				0																																	
338	46.122096	-89.824860	8	Sand	Pole				1												1																					
339	46.121781	-89.824861	4	Sand	Pole				2												2																					
340	46.120521	-89.824865	8	Muck	Pole				1										1	1																					

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Potamogeton crispus	Ceratophyllum demersum	Chara spp.	Elatine minima	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Equisetum fluviatile	Heteranthera dubia	Bidens beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton gramineus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria cristata	Sagittaria rigida	Schoenoplectus acutus	Schoenoplectus tabernaemontani	Sparganium eurycarpum	Utricularia vulgaris	Vallisneria americana	Filamentous algae	Sagittaria cuneata	Callitriche palustris
341	46.120206	-89.824866	0			DEEP																																					
342	46.119891	-89.824867	0			DEEP																																					
343	46.119576	-89.824868	0			DEEP																																					
344	46.119261	-89.824869	0			DEEP																																					
345	46.118946	-89.824870	0			DEEP																																					
346	46.118631	-89.824871	0			DEEP																																					
347	46.118316	-89.824872	0			DEEP																																					
348	46.118001	-89.824873	5	Sand	Pole				*																																		
349	46.116426	-89.824878	0			DEEP																																					
350	46.116111	-89.824879	0			DEEP																																					
351	46.115796	-89.824880	0			DEEP																																					
352	46.115481	-89.824881	0			DEEP																																					
353	46.115166	-89.824882	0			DEEP																																					
354	46.114851	-89.824883	11	Rock	Pole				0																																		
355	46.123671	-89.824402	4	Rock	Pole				0																																		
356	46.123356	-89.824403	0			DEEP																																					
357	46.123041	-89.824404	0			DEEP																																					
358	46.122726	-89.824405	0			DEEP																																					
359	46.122411	-89.824406	0			DEEP																																					
360	46.122096	-89.824407	15		Rope				0																																		
361	46.121781	-89.824408	10	Sand	Pole				0																																		
362	46.121466	-89.824409	7	Sand	Pole				0																																		
363	46.120521	-89.824412	4	Sand	Pole				1													1														1							
364	46.120206	-89.824413	14	Sand	Pole				0																																		
365	46.119891	-89.824414	0			DEEP																																					
366	46.119576	-89.824415	0			DEEP																																					
367	46.119261	-89.824416	0			DEEP																																					
368	46.118946	-89.824417	0			DEEP																																					
369	46.118631	-89.824418	0			DEEP																																					
370	46.118316	-89.824419	0			DEEP																																					
371	46.118001	-89.824420	2	Rock	Pole				*																																		
372	46.116426	-89.824425	13		Rope				0																																		
373	46.116111	-89.824426	0			DEEP																																					
374	46.115796	-89.824427	0			DEEP																																					
375	46.115481	-89.824428	0			DEEP																																					
376	46.115166	-89.824429	0			DEEP																																					
377	46.114851	-89.824430	0			DEEP																																					
378	46.123985	-89.823948	6	Sand	Pole				0																																		
379	46.123670	-89.823949	0			DEEP																																					
380	46.123355	-89.823950	0			DEEP																																					
381	46.123040	-89.823951	0			DEEP																																					
382	46.122725	-89.823952	0			DEEP																																					
383	46.122410	-89.823953	0			DEEP																																					
384	46.122095	-89.823954	0			DEEP																																					
385	46.121780	-89.823955	0			DEEP																																					
386	46.121465	-89.823956	13	Muck	Pole				0																																		
387	46.121150	-89.823957	7	Muck	Pole				2											1	1				1																	
388	46.120205	-89.823960	8	Muck	Pole				3											2					1																	
389	46.119890	-89.823961	10	Muck	Pole				1							1				1																						
390	46.119575	-89.823962	0			DEEP																																					
391	46.119260	-89.823963	0			DEEP																																					
392	46.118945	-89.823964	0			DEEP																																					
393	46.118630	-89.823965	0			DEEP																																					
394	46.118315	-89.823966	0			DEEP																																					
395	46.116425	-89.823972	8	Rock	Pole				0																																		
396	46.116110	-89.823973	0			DEEP																																					
397	46.115795	-89.823974	0			DEEP																																					
398	46.115480	-89.823975	0			DEEP																																					
399	46.115165	-89.823976	0			DEEP																																					
400	46.114850	-89.823977	0			DEEP																																					
401	46.123984	-89.823495	0			DEEP																																					
402	46.123669	-89.823496	0			DEEP																																					
403	46.123354	-89.823497	0			DEEP																																					
404	46.123039	-89.823498	0			DEEP																																					
405	46.122724	-89.823499	0			DEEP																																					
406	46.122409	-89.823500	0			DEEP																																					
407	46.122094	-89.823501	0			DEEP																																					
408	46.121779	-89.823502	0			DEEP																																					

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Potamogeton crispus	Ceratophyllum demersum	Chara spp.	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Equisetum fluviatile	Heteranthera dubia	Bidens beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton gramineus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria cristata	Sagittaria rigida	Schoenoplectus acutus	Schoenoplectus tabernaemontani	Sparganium eurycarpum	Utricularia vulgaris	Vallisneria americana	Filamentous algae	Sagittaria cuneata	Callitriche palustris
409	46.121464	-89.823503	0			DEEP																																				
410	46.121149	-89.823504	11	Muck	Pole				1						1				1																							
411	46.120834	-89.823505	8	Muck	Pole				2										2		1																					
412	46.120519	-89.823506	2	Sand	Pole				1											1					1																
413	46.120204	-89.823507	5	Sand	Pole				1			1								1					1																
414	46.119889	-89.823508	13	Sand	Pole				0																																
415	46.119574	-89.823509	0			DEEP																																			
416	46.119259	-89.823510	0			DEEP																																			
417	46.118944	-89.823511	0			DEEP																																			
418	46.118629	-89.823512	9	Rock	Pole				*																																
419	46.115794	-89.823521	0			DEEP																																			
420	46.115479	-89.823522	0			DEEP																																			
421	46.115164	-89.823523	0			DEEP																																			
422	46.114849	-89.823524	3	Rock	Pole				0																																
423	46.124299	-89.823041	0			DEEP																																			
424	46.123984	-89.823042	0			DEEP																																			
425	46.123669	-89.823043	0			DEEP																																			
426	46.123354	-89.823044	0			DEEP																																			
427	46.123039	-89.823045	0			DEEP																																			
428	46.122724	-89.823046	0			DEEP																																			
429	46.122409	-89.823047	0			DEEP																																			
430	46.122094	-89.823048	0			DEEP																																			
431	46.121779	-89.823049	0			DEEP																																			
432	46.121463	-89.823050	0			DEEP																																			
433	46.121148	-89.823051	14		Rope				0																																
434	46.120834	-89.823052	11	Muck	Pole				1										1		1						1														
435	46.120518	-89.823053	8	Sand	Pole				1						1					1	1				1														1		
436	46.120203	-89.823054	13	Sand	Pole				0																																
437	46.119888	-89.823055	0			DEEP																																			
438	46.119573	-89.823056	0			DEEP																																			
439	46.119258	-89.823057	4	Rock	Pole				*																																
440	46.115793	-89.823068	6	Sand	Pole				0																																
441	46.115478	-89.823069	0			DEEP																																			
442	46.115163	-89.823070	14		Rope				0																																
443	46.125243	-89.822585	5	Sand	Pole				0																																
444	46.124928	-89.822586	12	Rock	Pole				0																																
445	46.124613	-89.822587	0			DEEP																																			
446	46.124298	-89.822588	0			DEEP																																			
447	46.123983	-89.822589	0			DEEP																																			
448	46.123668	-89.822590	0			DEEP																																			
449	46.123353	-89.822591	0			DEEP																																			
450	46.123038	-89.822592	0			DEEP																																			
451	46.122723	-89.822593	0			DEEP																																			
452	46.122408	-89.822594	0			DEEP																																			
453	46.122093	-89.822595	0			DEEP																																			
454	46.121778	-89.822596	0			DEEP																																			
455	46.121463	-89.822597	0			DEEP																																			
456	46.121148	-89.822598	0			DEEP																																			
457	46.120833	-89.822599	0			DEEP																																			
458	46.120518	-89.822600	0			DEEP																																			
459	46.120203	-89.822601	0			DEEP			]																																
460	46.119888	-89.822602	0			DEEP																																			
461	46.119573	-89.822603	0			DEEP																																			
462	46.115793	-89.822615	1	Rock	Pole				0																																
463	46.115478	-89.822616	0			DEEP																																			
464	46.115163	-89.822618	7	Sand	Pole				0																																
465	46.126187	-89.822129	6	Rock	Pole				0																																
466	46.125872	-89.822130	0			DEEP																																			
467	46.125557	-89.822131	9	Rock	Pole				0																																
468	46.125242	-89.822132	0			DEEP																																			
469	46.124927	-89.822133	0			DEEP																																			
470	46.124612	-89.822134	0			DEEP																																			
471	46.124297	-89.822135	0			DEEP																																			
472	46.123982	-89.822136	0			DEEP																																			
473	46.123667	-89.822137	0			DEEP																																			
474	46.123352	-89.822138	0			DEEP																																			
475	46.123037	-89.822139	0			DEEP																																			
476	46.122722	-89.822140	0			DEEP																																			

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Potamogeton crispus	Ceratophyllum demersum	Chara spp.	Elatine minima	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Equisetum fluviatile	Heteranthera dubia	Bidens beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton gramineus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria cristata	Sagittaria rigida	Schoenoplectus acutus	Schoenoplectus tabernaemontani	Sparganium eurycarpum	Utricularia vulgaris	Vallisneria americana	Filamentous algae	Sagittaria cuneata	Callitriche palustris
477	46.122407	-89.822141	0			DEEP																																					
478	46.122092	-89.822142	0			DEEP																																					
479	46.121777	-89.822143	0			DEEP																																					
480	46.121462	-89.822144	0			DEEP																																					
481	46.121147	-89.822145	0			DEEP																																					
482	46.120832	-89.822146	0			DEEP																																					
483	46.120517	-89.822147	0			DEEP																																					
484	46.120202	-89.822148	0			DEEP																																					
485	46.119887	-89.822149	0			DEEP																																					
486	46.119572	-89.822150	5	Rock	Pole				*																																		
487	46.116107	-89.822162	6	Sand	Pole				0																																		
488	46.115792	-89.822163	14		Rope				0																																		
489	46.115477	-89.822164	0			DEEP																																					
490	46.115162	-89.822165	0			DEEP																																					
491	46.114847	-89.822166	12	Sand	Pole				0																																		
492	46.128076	-89.821670	4	Muck	Pole				3		1			1							1													1						3			
493	46.127131	-89.821673	4	Rock	Pole				0																																		
494	46.126816	-89.821674	5	Sand	Pole				0																																		
495	46.126501	-89.821675	10	Rock	Pole				0																																		
496	46.126186	-89.821676	0			DEEP																																					
497	46.125871	-89.821677	0			DEEP																																					
498	46.125556	-89.821678	0			DEEP																																					
499	46.125241	-89.821679	0			DEEP																																					
500	46.124926	-89.821680	0			DEEP																																					
501	46.124611	-89.821681	0			DEEP																																					
502	46.124296	-89.821682	0			DEEP																																					
503	46.123981	-89.821683	0			DEEP																																					
504	46.123666	-89.821684	0			DEEP																																					
505	46.123351	-89.821685	0			DEEP																																					
506	46.123036	-89.821686	0			DEEP																																					
507	46.122721	-89.821687	0			DEEP																																					
508	46.122406	-89.821688	0			DEEP																																					
509	46.122091	-89.821689	0			DEEP																																					
510	46.121776	-89.821690	0			DEEP																																					
511	46.121461	-89.821691	0			DEEP																																					
512	46.121146	-89.821692	0			DEEP																																					
513	46.120831	-89.821693	0			DEEP																																					
514	46.120516	-89.821694	0			DEEP																																					
515	46.120201	-89.821695	0			DEEP																																					
516	46.119886	-89.821696	0			DEEP																																					
517	46.116106	-89.821709	9	Sand	Pole				0																																		
518	46.115791	-89.821710	14		Rope				0																																		
519	46.115476	-89.821711	0			DEEP																																					
520	46.115161	-89.821712	0			DEEP																																					
521	46.114846	-89.821713	11	Sand	Pole				0																																		
522	46.128076	-89.821217	2	Sand	Pole				2					1							2						1															
523	46.127761	-89.821218	3	Sand	Pole				3																		3															
524	46.127446	-89.821219	8	Sand	Pole				0																																		
525	46.127131	-89.821220	10	Sand	Pole				0																																		
526	46.126816	-89.821221	0			DEEP																																					
527	46.126501	-89.821222	0			DEEP																																					
528	46.126186	-89.821223	0			DEEP																																					
529	46.125871	-89.821224	0			DEEP																																					
530	46.125556	-89.821225	0			DEEP																																					
531	46.125241	-89.821226	0			DEEP																																					
532	46.124926	-89.821227	0			DEEP																																					
533	46.124611	-89.821228	0			DEEP																																					
534	46.124296	-89.821229	0			DEEP																																					
535	46.123981	-89.821230	0			DEEP																																					
536	46.123666	-89.821231	0			DEEP																																					
537	46.123351	-89.821232	0			DEEP																																					
538	46.123036	-89.821233	0			DEEP																																					
539	46.122721	-89.821234	0			DEEP																																					
540	46.122406	-89.821235	0			DEEP																																					
541	46.122091	-89.821236	0			DEEP																																					
542	46.121776	-89.821237	0			DEEP																																					
543	46.121461	-89.821238	0			DEEP																																					
544	46.121146	-89.821239	0			DEEP																																					

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Potamogeton crispus	Ceratophyllum demersum	Chara spp.	Elatine minima	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Equisetum fluviatile	Heteranthera dubia	Bidens beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton gramineus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria cristata	Sagittaria rigida	Schoenoplectus acutus	Schoenoplectus tabernaemontani	Sparganium eurycarpum	Utricularia vulgaris	Vallisneria americana	Filamentous algae	Sagittaria cuneata	Callitriche palustris
545	46.120831	-89.821240	0			DEEP																																					
546	46.120516	-89.821241	0			DEEP																																					
547	46.120201	-89.821242	0			DEEP																																					
548	46.119886	-89.821243	13		Rope				*																																	
549	46.119571	-89.821244	2	Rock	Pole				0																																	
550	46.115791	-89.821257	14		Rope				0																																	
551	46.115476	-89.821258	14		Rope				0																																	
552	46.115161	-89.821259	4	Rock	Pole				0																																	
553	46.128075	-89.820764	5	Sand	Pole				0																																	
554	46.127760	-89.820765	9	Sand	Pole				1												1										1									1			
555	46.127445	-89.820766	9	Sand	Pole				0																																	
556	46.127130	-89.820767	11	Sand	Pole				0																																	
557	46.126815	-89.820768	0			DEEP																																					
558	46.126500	-89.820769	0			DEEP																																					
559	46.126185	-89.820770	0			DEEP																																					
560	46.125870	-89.820771	0			DEEP																																					
561	46.125555	-89.820772	0			DEEP																																					
562	46.125240	-89.820773	0			DEEP																																					
563	46.124925	-89.820774	0			DEEP																																					
564	46.124610	-89.820775	0			DEEP																																					
565	46.124295	-89.820776	0			DEEP																																					
566	46.123980	-89.820777	0			DEEP																																					
567	46.123665	-89.820778	0			DEEP																																					
568	46.123350	-89.820779	0			DEEP																																					
569	46.123035	-89.820780	0			DEEP																																					
570	46.122720	-89.820781	0			DEEP																																					
571	46.122405	-89.820782	0			DEEP																																					
572	46.122090	-89.820783	0			DEEP																																					
573	46.121775	-89.820784	0			DEEP																																					
574	46.121460	-89.820785	0			DEEP																																					
575	46.121145	-89.820786	0			DEEP																																					
576	46.120830	-89.820787	0			DEEP																																					
577	46.120515	-89.820788	0			DEEP																																					
578	46.120200	-89.820789	0			DEEP																																					
579	46.119885	-89.820790	0			DEEP																																					
580	46.119570	-89.820791	0			DEEP																																					
581	46.119255	-89.820792	2	Rock	Pole				0																																	
582	46.115790	-89.820804	0			DOCK																																					
583	46.115475	-89.820805	5	Sand	Pole				0																																	
584	46.128074	-89.820311	7	Sand	Pole				1							1				1									1									1			
585	46.127759	-89.820312	13	Sand	Pole				0																																	
586	46.127444	-89.820313	15		Rope				0																																	
587	46.127129	-89.820314	0			DEEP																																					
588	46.126814	-89.820315	0			DEEP																																					
589	46.126499	-89.820316	0			DEEP																																					
590	46.126184	-89.820317	0			DEEP																																					
591	46.125869	-89.820318	0			DEEP																																					
592	46.125554	-89.820319	0			DEEP																																					
593	46.125239	-89.820320	0			DEEP																																					
594	46.124924	-89.820321	0			DEEP																																					
595	46.124609	-89.820322	0			DEEP																																					
596	46.124294	-89.820323	0			DEEP																																					
597	46.123979	-89.820324	0			DEEP																																					
598	46.123664	-89.820325	0			DEEP																																					
599	46.123349	-89.820326	0			DEEP																																					
600	46.123034	-89.820327	0			DEEP																																					
601	46.122719	-89.820328	0			DEEP																																					
602	46.122404	-89.820329	0			DEEP																																					
603	46.122089	-89.820330	0			DEEP																																					
604	46.121774	-89.820331	0			DEEP																																					
605	46.121459	-89.820332	0			DEEP																																					
606	46.121144	-89.820333	0			DEEP																																					
607	46.120829	-89.820334	0			DEEP																																					
608	46.120514	-89.820335	0			DEEP																																					
609	46.120199	-89.820336	0			DEEP																																					
610	46.119884	-89.820337	0			DEEP																																					
611	46.119569	-89.820338	0			DEEP																																					
612	46.119254	-89.820339	7	Sand	Pole				*																																	

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Potamogeton crispus	Ceratophyllum demersum	Chara spp.	Eliatine minima	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Equisetum fluviatile	Heteranthera dubia	Bidens beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton gramineus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria cristata	Sagittaria rigida	Schoenoplectus acutus	Schoenoplectus tabernaemontani	Sparganium eurycarpum	Utricularia vulgaris	Vallisneria americana	Filamentous algae	Sagittaria cuneata	Callitriche palustris
613	46.115474	-89.820352	5	Muck	Pole				2							2																											
614	46.128074	-89.819858	7	Sand	Pole				2							2				1		1						1	1											1			
615	46.127759	-89.819859	12	Sand	Pole				0																																		
616	46.127444	-89.819860	14		Rope				0																																		
617	46.127129	-89.819861	0			DEEP																																					
618	46.126814	-89.819862	0			DEEP																																					
619	46.126499	-89.819863	0			DEEP																																					
620	46.126184	-89.819864	0			DEEP																																					
621	46.125869	-89.819865	0			DEEP																																					
622	46.125554	-89.819866	0			DEEP																																					
623	46.125239	-89.819867	0			DEEP																																					
624	46.124924	-89.819868	0			DEEP																																					
625	46.124609	-89.819869	0			DEEP																																					
626	46.124294	-89.819870	0			DEEP																																					
627	46.123979	-89.819871	0			DEEP																																					
628	46.123664	-89.819872	0			DEEP																																					
629	46.123349	-89.819873	0			DEEP																																					
630	46.123034	-89.819874	0			DEEP																																					
631	46.122719	-89.819875	0			DEEP																																					
632	46.122404	-89.819876	0			DEEP																																					
633	46.122089	-89.819877	0			DEEP																																					
634	46.121774	-89.819878	0			DEEP																																					
635	46.121459	-89.819879	0			DEEP																																					
636	46.121144	-89.819880	0			DEEP																																					
637	46.120829	-89.819881	0			DEEP																																					
638	46.120514	-89.819882	0			DEEP																																					
639	46.120199	-89.819883	0			DEEP																																					
640	46.119884	-89.819884	0			DEEP																																					
641	46.119569	-89.819885	0			DEEP																																					
642	46.115473	-89.819899	4	Sand	Pole				2							2				1																							
643	46.128073	-89.819405	6	Sand	Pole				1												1																						
644	46.127758	-89.819406	10	Sand	Pole				1			1									1	1																					
645	46.127443	-89.819407	0			DEEP																																					
646	46.127128	-89.819408	0			DEEP																																					
647	46.126813	-89.819409	0			DEEP																																					
648	46.126498	-89.819410	0			DEEP																																					
649	46.126183	-89.819411	0			DEEP																																					
650	46.125868	-89.819412	0			DEEP																																					
651	46.125553	-89.819413	0			DEEP																																					
652	46.125238	-89.819414	0			DEEP																																					
653	46.124923	-89.819415	0			DEEP																																					
654	46.124608	-89.819416	0			DEEP																																					
655	46.124293	-89.819417	0			DEEP																																					
656	46.123978	-89.819418	0			DEEP																																					
657	46.123663	-89.819419	0			DEEP																																					
658	46.123348	-89.819420	0			DEEP																																					
659	46.123033	-89.819421	0			DEEP																																					
660	46.122718	-89.819422	0			DEEP																																					
661	46.122403	-89.819423	0			DEEP																																					
662	46.122088	-89.819424	0			DEEP																																					
663	46.121773	-89.819425	0			DEEP																																					
664	46.121458	-89.819426	0			DEEP																																					
665	46.121143	-89.819427	0			DEEP																																					
666	46.120828	-89.819428	0			DEEP																																					
667	46.120513	-89.819429	0			DEEP																																					
668	46.120198	-89.819430	0			DEEP																																					
669	46.119883	-89.819431	15		Rope				*																																		
670	46.115473	-89.819446	1	Sand	Pole				3							2																1										1	1
671	46.128072	-89.818952	5	Sand	Pole				0																																		
672	46.127757	-89.818953	10	Sand	Pole				1									1			1						1																
673	46.127442	-89.818954	0			DEEP																																					
674	46.127127	-89.818955	0			DEEP																																					
675	46.126812	-89.818956	0			DEEP																																					
676	46.126497	-89.818957	0			DEEP																																					
677	46.126182	-89.818958	0			DEEP																																					
678	46.125867	-89.818959	0			DEEP																																					
679	46.125552	-89.818960	0			DEEP																																					
680	46.125237	-89.818961	0			DEEP																																					

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Potamogeton crispus	Ceratophyllum demersum	Chara spp.	Elatine minima	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Equisetum fluviatile	Heteranthera dubia	Bidens beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton gramineus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria cristata	Sagittaria rigida	Schoenoplectus acutus	Schoenoplectus tabernaemontani	Sparganium eurycarpum	Utricularia vulgaris	Vallisneria americana	Filamentous algae	Sagittaria cuneata	Callitriche palustris
681	46.124922	-89.818962	0			DEEP																																					
682	46.124607	-89.818963	0			DEEP																																					
683	46.124292	-89.818964	0			DEEP																																					
684	46.123977	-89.818965	0			DEEP																																					
685	46.123662	-89.818966	0			DEEP																																					
686	46.123347	-89.818967	0			DEEP																																					
687	46.123032	-89.818968	0			DEEP																																					
688	46.122717	-89.818969	0			DEEP																																					
689	46.122402	-89.818970	0			DEEP																																					
690	46.122087	-89.818971	0			DEEP																																					
691	46.121772	-89.818972	0			DEEP																																					
692	46.121457	-89.818973	0			DEEP																																					
693	46.121142	-89.818974	0			DEEP																																					
694	46.120827	-89.818975	0			DEEP																																					
695	46.120512	-89.818976	0			DEEP																																					
696	46.120197	-89.818977	0			DEEP																																					
697	46.119882	-89.818978	0			DEEP																																					
698	46.127756	-89.818500	9	Sand	Pole				1			1																															
699	46.127441	-89.818501	0			DEEP																																					
700	46.127126	-89.818502	0			DEEP																																					
701	46.126811	-89.818503	0			DEEP																																					
702	46.126496	-89.818504	0			DEEP																																					
703	46.126181	-89.818505	0			DEEP																																					
704	46.125866	-89.818506	0			DEEP																																					
705	46.125551	-89.818507	0			DEEP																																					
706	46.125236	-89.818508	0			DEEP																																					
707	46.124921	-89.818509	0			DEEP																																					
708	46.124606	-89.818510	0			DEEP																																					
709	46.124291	-89.818511	0			DEEP																																					
710	46.123976	-89.818512	0			DEEP																																					
711	46.123661	-89.818513	0			DEEP																																					
712	46.123346	-89.818514	0			DEEP																																					
713	46.123031	-89.818515	0			DEEP																																					
714	46.122716	-89.818516	0			DEEP																																					
715	46.122401	-89.818517	0			DEEP																																					
716	46.122086	-89.818518	0			DEEP																																					
717	46.121771	-89.818519	0			DEEP																																					
718	46.121456	-89.818520	0			DEEP																																					
719	46.121141	-89.818521	0			DEEP																																					
720	46.120826	-89.818522	0			DEEP																																					
721	46.120511	-89.818523	0			DEEP																																					
722	46.120196	-89.818524	0			DEEP																																					
723	46.119881	-89.818525	0			DEEP																																					
724	46.119566	-89.818527	1	Rock	Pole				0																																		
725	46.127756	-89.818047	9	Sand	Pole				0																																		
726	46.127441	-89.818048	0			DEEP																																					
727	46.127126	-89.818049	0			DEEP																																					
728	46.126811	-89.818050	0			DEEP																																					
729	46.126496	-89.818051	0			DEEP																																					
730	46.126181	-89.818052	0			DEEP																																					
731	46.125866	-89.818053	0			DEEP																																					
732	46.125551	-89.818054	0			DEEP																																					
733	46.125236	-89.818055	0			DEEP																																					
734	46.124921	-89.818056	0			DEEP																																					
735	46.124606	-89.818057	0			DEEP																																					
736	46.124291	-89.818058	0			DEEP																																					
737	46.123976	-89.818059	0			DEEP																																					
738	46.123661	-89.818060	0			DEEP																																					
739	46.123346	-89.818061	0			DEEP																																					
740	46.123031	-89.818062	0			DEEP																																					
741	46.122716	-89.818063	0			DEEP																																					
742	46.122401	-89.818064	13		Rope				0																																		
743	46.122086	-89.818065	11	Sand	Pole				0																																		
744	46.121771	-89.818066	11	Rock	Pole				0																																		
745	46.121456	-89.818067	0			DEEP																																					
746	46.121141	-89.818068	0			DEEP																																					
747	46.120826	-89.818069	0			DEEP																																					
748	46.120511	-89.818070	0			DEEP																																					

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Potamogeton crispus	Ceratophyllum demersum	Chara spp.	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Equisetum fluviatile	Heteranthera dubia	Bidens beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton gramineus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria cristata	Sagittaria rigida	Schoenoplectus acutus	Schoenoplectus tabernaemontani	Sparganium eurycarpum	Utricularia vulgaris	Vallisneria americana	Filamentous algae	Sagittaria cuneata	Callitriche palustris
749	46.120196	-89.818071	0			DEEP																																				
750	46.119881	-89.818072	0			DEEP																																				
751	46.119566	-89.818074	0			DEEP																																				
752	46.119251	-89.818075	2	Rock	Pole				0																																	
753	46.127440	-89.817595	11	Sand	Pole				0																																	
754	46.127125	-89.817596	0			DEEP																																				
755	46.126810	-89.817597	0			DEEP																																				
756	46.126495	-89.817598	0			DEEP																																				
757	46.126180	-89.817599	0			DEEP																																				
758	46.125865	-89.817600	0			DEEP																																				
759	46.125550	-89.817601	0			DEEP																																				
760	46.125235	-89.817602	0			DEEP																																				
761	46.124920	-89.817603	0			DEEP																																				
762	46.124605	-89.817604	0			DEEP																																				
763	46.124290	-89.817605	0			DEEP																																				
764	46.123975	-89.817606	0			DEEP																																				
765	46.123660	-89.817607	0			DEEP																																				
766	46.123345	-89.817608	0			DEEP																																				
767	46.123030	-89.817609	0			DEEP																																				
768	46.122715	-89.817610	0			DEEP																																				
769	46.122400	-89.817611	10	Sand	Pole				0																																	
770	46.121455	-89.817614	11	Sand	Pole				0																																	
771	46.121140	-89.817615	0			DEEP																																				
772	46.120825	-89.817616	0			DEEP																																				
773	46.120510	-89.817617	0			DEEP																																				
774	46.120195	-89.817618	0			DEEP																																				
775	46.119880	-89.817620	0			DEEP																																				
776	46.119565	-89.817621	0			DEEP																																				
777	46.127439	-89.817142	8	Muck	Pole				2								1		1									1										2				
778	46.127124	-89.817143	10	Sand	Pole				2								1		1																						
779	46.126809	-89.817144	11	Sand	Pole				1						1		1				1																		1			
780	46.126494	-89.817145	14		Rope				0																																	
781	46.126179	-89.817146	12	Sand	Pole				1								1																									
782	46.125864	-89.817147	0			DEEP																																				
783	46.125549	-89.817148	13		Rope				0																																	
784	46.125234	-89.817149	0			DEEP																																				
785	46.124919	-89.817150	15		Rope				0																																	
786	46.124604	-89.817151	0			DEEP																																				
787	46.124289	-89.817152	0			DEEP																																				
788	46.123974	-89.817153	0			DEEP																																				
789	46.123659	-89.817154	0			DEEP																																				
790	46.123344	-89.817155	0			DEEP																																				
791	46.123029	-89.817156	0			DEEP																																				
792	46.122714	-89.817157	0			DEEP																																				
793	46.122399	-89.817158	13	Sand	Pole				0																																	
794	46.122084	-89.817159	2	Rock	Pole				0																																	
795	46.119879	-89.817167	8	Rock	Pole				0																																	
796	46.127124	-89.816689	5	Sand	Pole				2			1	1								1					1												1				
797	46.126809	-89.816691	5	Sand	Pole				2				1		1						2																					
798	46.126494	-89.816692	8	Sand	Pole				1						1						1	1										1									
799	46.126179	-89.816693	8	Sand	Pole				3	1					1				3																		1				
800	46.125864	-89.816694	9	Sand	Pole				3	1	1								2																						
801	46.125549	-89.816695	9	Sand	Pole				3										3															1							
802	46.125234	-89.816696	9	Sand	Pole				1															1				1										1			
803	46.124919	-89.816697	9	Muck	Pole				2										2								1													
804	46.124604	-89.816698	0			DEEP																																				
805	46.124289	-89.816699	0			DEEP																																				
806	46.123974	-89.816700	0			DEEP																																				
807	46.123659	-89.816701	0			DEEP																																				
808	46.123344	-89.816702	0			DEEP																																				
809	46.123029	-89.816703	0			DEEP																																				
810	46.122714	-89.816704	0			DEEP																																				
811	46.122399	-89.816705	0			DEEP																																				
812	46.122084	-89.816706	8	Sand	Pole				0																																	
813	46.125548	-89.816242	6	Sand	Pole				1												1																		1			
814	46.125233	-89.816243	6	Sand	Pole				2								1				2																		1			
815	46.124918	-89.816244	8	Muck	Pole				2									1	1																				1			
816	46.124603	-89.816245	11	Sand	Pole				1										1											1											

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Potamogeton crispus	Ceratophyllum demersum	Chara spp.	Eliatine minima	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Equisetum fluviatile	Heteranthera dubia	Bidens beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton gramineus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria cristata	Sagittaria rigida	Schoenoplectus acutus	Schoenoplectus tabernaemontani	Sparganium eurycarpum	Utricularia vulgaris	Vallisneria americana	Filamentous algae	Sagittaria cuneata	Callitriche palustris
817	46.124288	-89.816246	14		Rope				0																																		
818	46.123973	-89.816247	0			DEEP																																					
819	46.123658	-89.816248	0			DEEP																																					
820	46.123343	-89.816249	0			DEEP																																					
821	46.123028	-89.816250	0			DEEP																																					
822	46.122713	-89.816251	0			DEEP																																					
823	46.122398	-89.816252	0			DEEP																																					
824	46.122083	-89.816253	0			DEEP																																					
825	46.121768	-89.816254	6	Sand	Pole				0																																		
826	46.125232	-89.815790	6	Sand	Pole				2												1					1															1			
827	46.124917	-89.815791	6	Sand	Pole				1							1					1										1									1			
828	46.124602	-89.815792	8	Sand	Pole				1																															1			
829	46.124287	-89.815793	9	Sand	Pole				1																															1			
830	46.123972	-89.815794	0			DEEP																																					
831	46.123657	-89.815795	0			DEEP																																					
832	46.123342	-89.815796	0			DEEP																																					
833	46.123027	-89.815797	0			DEEP																																					
834	46.122712	-89.815798	0			DEEP																																					
835	46.122397	-89.815799	0			DEEP																																					
836	46.122082	-89.815800	0			DEEP																																					
837	46.121767	-89.815801	11	Sand	Pole				0																																		
838	46.124916	-89.815338	6	Sand	Pole				2		1	1					1				1																			1			
839	46.124601	-89.815339	6	Sand	Pole				2												1					1				2										1			
840	46.124286	-89.815340	9	Sand	Pole				2							1													1										1			
841	46.123971	-89.815341	9	Sand	Pole				2							1				1													1						2			
842	46.123656	-89.815342	0			DEEP																																					
843	46.123341	-89.815343	0			DEEP																																					
844	46.123026	-89.815344	0			DEEP																																					
845	46.122711	-89.815345	0			DEEP																																					
846	46.122396	-89.815346	0			DEEP																																					
847	46.122081	-89.815347	0			DEEP																																					
848	46.121766	-89.815348	7	Rock	Pole				0																																		
849	46.124916	-89.814885	5	Sand	Pole				1			1				1					1									1													
850	46.124601	-89.814886	8	Muck	Pole				3	1	3					1																							1			
851	46.124286	-89.814887	8	Sand	Pole				1		1	1				1				1	1																		1			
852	46.123971	-89.814888	8	Sand	Pole				2											2																						
853	46.123656	-89.814889	10	Sand	Pole				0																																		
854	46.123341	-89.814890	0			DEEP																																					
855	46.123026	-89.814891	0			DEEP																																					
856	46.122711	-89.814892	0			DEEP																																					
857	46.122396	-89.814893	0			DEEP																																					
858	46.122081	-89.814894	13	Sand	Pole				0																																		
859	46.121766	-89.814895	0			DOCK																																					
860	46.124915	-89.814432	5	Sand	Pole				1												1																						
861	46.124600	-89.814433	8	Muck	Pole				3	2						1				1									1										1			
862	46.124285	-89.814434	7	Muck	Pole				2							1		1				2																	1			
863	46.123970	-89.814435	8	Sand	Pole				3		2					1				1		1																	1			
864	46.123655	-89.814436	14		Rope				1													1																				
865	46.123340	-89.814437	0			DEEP																																					
866	46.123025	-89.814438	0			DEEP																																					
867	46.122710	-89.814439	0			DEEP																																					
868	46.122395	-89.814440	13		Rope				0																																		
869	46.122080	-89.814441	9	Rock	Pole				0																																		
870	46.124914	-89.813979	7	Muck	Pole		Northern waterrmilfoil flowering at the surface	YES	3							1				3																					1			
871	46.124599	-89.813980	8	Muck	Pole				2		1					1						1																	1	2			
872	46.124284	-89.813981	6	Sand	Pole				2																															2			
873	46.123969	-89.813982	7	Sand	Pole				1																															1			
874	46.123654	-89.813983	11	Sand	Pole				0																																		
875	46.123339	-89.813984	0			DEEP																																					
876	46.123024	-89.813985	0			DEEP																																					
877	46.122709	-89.813986	0			DEEP																																					
878	46.122394	-89.813987	9	Muck	Pole				0																																		
879	46.125228	-89.813525	7	Sand	Pole			YES	3		2					1				2																			1			
880	46.124913	-89.813526	8	Muck	Pole				3		1					1		1		1																			1			
881	46.124598	-89.813527	6	Sand	Pole				2																					1									2			
882	46.124283	-89.813528	2	Sand	Pole				2					1	1	1	1																									
883	46.125228	-89.813072	9	Sand	Pole				2	1						2																									
884	46.124913	-89.813073	6	Sand	Pole				2		1					1																		1					1			

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Potamogeton crispus	Ceratophyllum demersum	Chara spp.	Eliatine minima	Eleocharis acicularis	Eleocharis palustris	Elodea canadensis	Equisetum fluviatile	Heteranthera dubia	Bidens beckii	Myriophyllum sibiricum	Najas flexilis	Nitella sp.	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton gramineus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria cristata	Sagittaria rigida	Schoenoplectus acutus	Schoenoplectus tabernaemontani	Sparganium eurycarpum	Utricularia vulgaris	Vallisneria americana	Filamentous algae	Sagittaria cuneata	Callitriche palustris
885	46.124598	-89.813074	5	Sand	Pole				2							1																								1			
886	46.124283	-89.813075	4	Sand	Pole				2											1		1	1			1								1						1			
887	46.123968	-89.813076	0			NONNAVIGABLE (PLANTS)																																						
888	46.125542	-89.812617	7	Sand	Pole				3	1	1					1				2									1				1						2			
889	46.125227	-89.812619	8	Sand	Pole				3	1						3													1										1			
890	46.124912	-89.812620	5	Sand	Pole				2							1					2					1																
891	46.124597	-89.812621	0	Sand	Pole				1				1				1																	1				1				
892	46.125541	-89.812164	6	Sand	Pole				2							1			1		1																		1			
893	46.125226	-89.812165	8	Muck	Pole				2		1					2				1									1										1			
894	46.124911	-89.812167	5	Muck	Pole				3			1				1				1																			3			
895	46.126170	-89.811709	2	Muck	Pole				2																1									1								
896	46.125855	-89.811710	3	Sand	Pole				2												2																					
897	46.125540	-89.811711	7	Muck	Pole				3		1					1																		1					3			
898	46.125225	-89.811712	6	Sand	Pole				2							2																		1					1			
899	46.124910	-89.811714	4	Sand	Pole				3							1																							3			
900	46.126485	-89.811255	2	Muck	Pole				2							1				1				1						1				1	1	1		1	1			
901	46.126170	-89.811256	3	Muck	Pole				2			1								1	2										1								1			
902	46.125855	-89.811257	6	Sand	Pole				3		1					3													1										1			
903	46.125540	-89.811258	7	Sand	Pole			YES	3	1	1					3				1																			1			
904	46.125225	-89.811259	1	Rock	Pole				0																																	
905	46.126169	-89.810803	5	Sand	Pole				3							3			1	1														1					1			
906	46.125854	-89.810804	7	Muck	Pole				3		1					1																		1					3			
907	46.125539	-89.810805	2	Sand	Pole				2	1				1		1										1																
908	46.126168	-89.810350	6	Sand	Pole				2							1		1		1	1																		1			
909	46.125853	-89.810351	3	Sand	Pole				1						1	1	1				1					1																
910	46.126167	-89.809897	6	Sand	Pole				2		1					2		1		1																			1			
911	46.125852	-89.809898	6	Sand	Pole				3		1					1									2														1			
912	46.125537	-89.809899	3	Sand	Pole				1				1								1					1																
913	46.125537	-89.809446	7	Muck	Pole				3		1					3				1										1												

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Ceratophyllum demersum	Chara spp.	Eleocharis acicularis	Elodea canadensis	Elodea nuttallii	Equisetum fluviatile	Isoetes sp.	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum tenellum	Najas flexilis	Nymphaea odorata	Potamogeton amplifolius	Potamogeton friesii	Potamogeton gramineus	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria sp. (rosette)	Schoenoplectus acutus	Stuckenia pectinata	Utricularia intermedia	Utricularia vulgaris	Vallisneria americana	Aquatic moss	Freshwater sponge
1	46.15023254	-89.82274808	0			NONNAVIGABLE (PLANTS)																																	
2	46.14967454	-89.82274987	0			NONNAVIGABLE (PLANTS)																																	
3	46.14074647	-89.82277853	6	Sand	Pole				3				1									1						2				1							
4	46.14018846	-89.82278032	8	Muck	Pole				3																			3											
5	46.13963046	-89.82278211	10	Muck	Pole				2	1			1												1			1											
6	46.13907245	-89.8227839	8	Muck	Pole				2	1																		2									1		
7	46.13851445	-89.82278569	0			TERRESTRIAL																																	
8	46.1507893	-89.82194341	0			NONNAVIGABLE (PLANTS)																																	
9	46.1502313	-89.82194521	0			NONNAVIGABLE (PLANTS)																																	
10	46.14967329	-89.82194701	0			NONNAVIGABLE (PLANTS)																																	
11	46.14130323	-89.82197399	10	Sand	Pole				3	1			1					2														1							
12	46.14074522	-89.82197579	12	Muck	Pole				2																			2											
13	46.14018722	-89.82197759	9	Muck	Pole				3																			3											
14	46.13962921	-89.82197939	14	Muck	Pole				1	1			1												1							1							
15	46.13907121	-89.82198119	9	Muck	Pole				3																			3				1							
16	46.1385132	-89.82198299	6	Muck	Pole				3	1	1																1					1					2		
17	46.15134605	-89.82113873	0			NONNAVIGABLE (PLANTS)																																	
18	46.15078805	-89.82114053	0			NONNAVIGABLE (PLANTS)																																	
19	46.15023004	-89.82114234	0			NONNAVIGABLE (PLANTS)																																	
20	46.14967204	-89.82114415	0			NONNAVIGABLE (PLANTS)																																	
21	46.14576601	-89.8211568	1	Sand	Pole				3	1			1							3						1			1			1							
22	46.14185998	-89.82116945	7	Sand	Pole				3				1															3											
23	46.14130197	-89.82117125	14		Rope				1				1													1		1											
24	46.14074397	-89.82117306	13	Muck	Pole				2				1																			1							
25	46.14018596	-89.82117487	13	Muck	Pole				3																		1					3							
26	46.13962796	-89.82117667	14	Muck	Pole				1	1																		1				1							
27	46.13906995	-89.82117848	10	Muck	Pole				3	1								1														3							
28	46.13851195	-89.82118029	8	Muck	Pole				3	1			1														1					1					2		
29	46.15190279	-89.82033402	2	Muck	Pole				1												1							1							1	1	1			
30	46.15078679	-89.82033765	2	Muck	Pole				3				1							1															1		1			
31	46.15022878	-89.82033947	0			NONNAVIGABLE (PLANTS)																																	
32	46.14743876	-89.82034855	3	Sand	Pole				1											1					1														
33	46.14688076	-89.82035036	6	Sand	Pole				3				3	1														1									1		
34	46.14632275	-89.82035218	8	Muck	Pole				1																		1	1								1		
35	46.14576475	-89.82035399	8	Muck	Pole				3	1																		3											
36	46.14520675	-89.82035581	8	Muck	Pole				3																			3											
37	46.14464874	-89.82035762	2	Rock	Pole				1																			1											
38	46.14185872	-89.8203667	14		Rope				1																	1	1					1							
39	46.14130071	-89.82036851	15		Rope				3																	3						1							
40	46.14074271	-89.82037033	15		Rope				3																3														
41	46.1401847	-89.82037214	15		Rope				1																							1							
42	46.1396267	-89.82037396	15		Rope				2																							2							
43	46.13906869	-89.82037577	12	Muck	Pole				3	2							1								1							1							
44	46.15190153	-89.81953113	3	Muck	Pole				3		1		1				1			1																	1		
45	46.15134353	-89.81953295	5	Muck	Pole				1				1																									
46	46.15078552	-89.81953478	3	Sand	Pole				3		1		1							3																	1		
47	46.1479955	-89.81954389	5	Sand	Pole				1																			1				1					1		
48	46.1474375	-89.81954572	9	Sand	Pole				2				1															2											
49	46.14687949	-89.81954754	10	Muck	Pole				3																			3											
50	46.14632149	-89.81954936	12	Muck	Pole				3	1																		1				2							
51	46.14576349	-89.81955119	10	Muck	Pole				3																			3				1							
52	46.14520548	-89.81955301	13	Muck	Pole				0																														
53	46.14464748	-89.81955483	15		Rope				0																														
54	46.14408947	-89.81955666	3	Rock	Pole				0																														
55	46.14353147	-89.81955848	4	Rock	Pole				0																														
56	46.14297346	-89.8195603	8	Sand	Pole				3				1					1									2		1			1							
57	46.14241546	-89.81956212	13	Sand	Pole				0																														
58	46.14185745	-89.81956395	18		Rope				0																														
59	46.14129945	-89.81956577	16		Rope				1																	1													
60	46.14074144	-89.81956759	16		Rope				1																	1													
61	46.14018344	-89.81956942	15		Rope				2	1																1		2			1							
62	46.13962544	-89.81957124	16		Rope				1																	1													
63	46.13906743	-89.81957306	11	Muck	Pole				2	1								1														1							
64	46.15245826	-89.8187264	3	Sand	Pole				1		1	1								1								1									1		
65	46.15190026	-89.81872823	6	Muck	Pole				2	1			1															1											
66	46.15134226	-89.81873006	5	Muck	Pole				3				1															3									1		
67	46.15078425	-89.8187319	5	Muck	Pole				3				3							1								1											
68	46.14799423	-89.81874105	10	Sand	Pole				3	1			1															2				1							
69	46.14743623	-89.81874289	13	Muck	Pole				1																			1									1		
70	46.14687822	-89.81874472	14		Rope				3	1																						3							

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Ceratophyllum demersum	Chara spp.	Eleocharis acicularis	Elodea canadensis	Elodea nuttallii	Equisetum fluviatile	Isoetes sp.	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum tenellum	Najas flexilis	Nymphaea odorata	Potamogeton amplifolius	Potamogeton friesii	Potamogeton gramineus	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria sp. (rosette)	Schoenoplectus acutus	Stuckenia pectinata	Utricularia intermedia	Utricularia vulgaris	Vallisneria americana	Aquatic moss	Freshwater sponge
71	46.14632022	-89.81874655	14		Rope				1																1														
72	46.14576222	-89.81874838	14		Rope				1	1																					1								
73	46.14520421	-89.81875021	16		Rope				1																						1								
74	46.14464621	-89.81875204	16		Rope				1																						1								
75	46.1440882	-89.81875387	18		Rope				0																														
76	46.1435302	-89.81875571	18		Rope				0																														
77	46.14297219	-89.81875754	17		Rope				0																														
78	46.14241419	-89.81875937	18		Rope				0																														
79	46.14185618	-89.8187612	19		Rope				0																														
80	46.14129818	-89.81876303	17		Rope				1																	1													
81	46.14074017	-89.81876486	18		Rope				2																	2													
82	46.14018217	-89.81876669	16		Rope				2																	2													
83	46.13962417	-89.81876852	17		Rope				0																														
84	46.13906616	-89.81877035	12	Muck	Pole				2				1					1														2							
85	46.15245699	-89.8179235	6	Muck	Pole				2				1									1					1	2											
86	46.15189898	-89.81792534	6	Muck	Pole				3				1							1								3									1		
87	46.15134098	-89.81792718	5	Muck	Pole				3																		1	3									1		
88	46.15078298	-89.81792902	5	Muck	Pole				3																			3									1		
89	46.15022497	-89.81793086	0			NONNAVIGABLE (PLANTS)																																	
90	46.14855096	-89.81793638	3	Sand	Pole				1											1																			
91	46.14799296	-89.81793822	10	Muck	Pole				3	1																		3					1						
92	46.14743495	-89.81794006	14		Rope				0																														
93	46.14687695	-89.8179419	14		Rope				1				1																										
94	46.14631894	-89.81794373	14		Rope				0																														
95	46.14576094	-89.81794557	16		Rope				1	1																													
96	46.14520294	-89.81794741	17		Rope				0																														
97	46.14464493	-89.81794925	17		Rope				0																														
98	46.14408693	-89.81795109	17		Pole				0																														
99	46.14352892	-89.81795293	18		Rope				0																														
100	46.14297092	-89.81795477	19		Rope				0																														
101	46.14241291	-89.81795661	20		Rope				0																														
102	46.14185491	-89.81795845	19		Rope				0																														
103	46.1412969	-89.81796029	18		Rope				0																														
104	46.1407389	-89.81796213	18		Rope				0																														
105	46.14018089	-89.81796397	16		Rope				1																	1													
106	46.13962289	-89.81796581	16		Rope				1	1																1													
107	46.13906488	-89.81796764	12	Muck	Pole				2																			2					1						
108	46.13850688	-89.81796948	4	Sand	Pole				1	1										1		1																
109	46.15301371	-89.81711875	6	Muck	Pole				2	1	1		1					1				1		1				1					1				1		
110	46.15245571	-89.81712059	6	Muck	Pole				2				1															1									1		
111	46.1518977	-89.81712244	7	Muck	Pole				3																			3											
112	46.1513397	-89.81712429	6	Muck	Pole				3													1						3											
113	46.15078169	-89.81712614	6	Muck	Pole				3																		1	3					1						
114	46.15022369	-89.81712799	3	Sand	Pole				2											2							1										1		
115	46.14966569	-89.81712983	2	Sand	Pole				1		1				1					1								1											
116	46.14910768	-89.81713168	1	Sand	Pole				1									1										1							1			1	
117	46.14854968	-89.81713353	5	Sand	Pole				1									1		1				1													1		
118	46.14799167	-89.81713538	12	Muck	Pole				2																			1					1						
119	46.14743367	-89.81713723	14		Rope				1																								1						
120	46.14687567	-89.81713907	15		Rope				0																														
121	46.14631766	-89.81714092	13		Rope				0																														
122	46.14575966	-89.81714277	17		Rope				1																								1						
123	46.14520165	-89.81714462	19		Rope				0																														
124	46.14464365	-89.81714646	17		Rope				0																														
125	46.14408565	-89.81714831	18		Rope				0																														
126	46.14352764	-89.81715016	19		Rope				0																														
127	46.14296964	-89.81715201	22		Rope				0																														
128	46.14241163	-89.81715385	21			DEEP																																
129	46.14185363	-89.8171557	21			DEEP																																
130	46.14129562	-89.81715755	17		Rope				0																														
131	46.14073762	-89.81715939	17		Rope				1				1	1														1											
132	46.14017961	-89.81716124	13		Rope				1																	1													
133	46.13962161	-89.81716309	14	Muck	Pole				1																	1						1							
134	46.1390636	-89.81716494	15		Rope				1	1																		1					1						
135	46.1385056	-89.81716678	7	Muck	Pole				2	1			2							1								1					1				2		
136	46.15357042	-89.81631398	5	Sand	Pole				1		1					1			1									1									1		
137	46.15301242	-89.81631583	7	Muck	Pole				3																			3											
138	46.15245442	-89.81631769	8	Muck	Pole				3																		1	3					1						
139	46.15189641	-89.81631955	8	Muck	Pole				3																			3											
140	46.15133841	-89.8163214	8	Muck	Pole				3	1																		3											

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Ceratophyllum demersum	Chara spp.	Eleocharis acicularis	Elodea canadensis	Elodea nuttallii	Equisetum fluviatile	Isoetes sp.	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum tenellum	Najas flexilis	Nymphaea odorata	Potamogeton amplifolius	Potamogeton friesii	Potamogeton gramineus	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria sp. (rosette)	Schoenoplectus acutus	Stuckenia pectinata	Utricularia intermedia	Utricularia vulgaris	Vallisneria americana	Aquatic moss	Freshwater sponge
141	46.15078041	-89.81632326	9	Muck	Pole				3																		3												
142	46.1502224	-89.81632512	5	Sand	Pole				3	2			1													1	1				1							
143	46.1496644	-89.81632697	3	Sand	Pole				3				2							1						1					1							
144	46.1491064	-89.81632883	5	Sand	Pole				2	1										2				1		1					1					1		
145	46.14854839	-89.81633068	6	Sand	Pole				2	1								2													1					1		
146	46.14799039	-89.81633254	13	Rock	Pole				0																													
147	46.14743238	-89.8163344	14		Rope				0																													
148	46.14687438	-89.81633625	15		Rope				0																													
149	46.14631638	-89.81633811	17		Rope				0																													
150	46.14575837	-89.81633996	18		Rope				0																													
151	46.14520037	-89.81634182	18		Rope				0																													
152	46.14464236	-89.81634367	17		Rope				1				1	1												1												
153	46.14408436	-89.81634553	18		Rope				0																													
154	46.14352635	-89.81634738	27			DEEP																																
155	46.14296835	-89.81634924	25			DEEP																																
156	46.14241035	-89.8163511	23			DEEP																																
157	46.14185234	-89.81635295	20		Rope				0																													
158	46.14129434	-89.81635481	15		Rope				0																													
159	46.14073633	-89.81635666	7	Sand	Pole				1											1						1				1	1						
160	46.14017833	-89.81635852	12	Sand	Pole				1				1													1		1										
161	46.13962032	-89.81636037	12	Muck	Pole				1	1			1														1				1							
162	46.13906232	-89.81636223	10	Muck	Pole				3	1			1														3											
163	46.13850431	-89.81636408	11	Muck	Pole				3	1																	1				2							
164	46.15356913	-89.81551106	7	Muck	Pole				3	1																	3											
165	46.15301113	-89.81551292	9	Muck	Pole				3				1														3				1							
166	46.15245312	-89.81551479	10	Muck	Pole				3	1			1												1		1				1							
167	46.15189512	-89.81551665	12	Muck	Pole				3	1			1														2				1							
168	46.15133712	-89.81551852	11	Muck	Pole				3	3																1	1				1							
169	46.15077911	-89.81552038	11		Rope				2	1			1														2											
170	46.15022111	-89.81552224	7	Muck	Pole				3	1			1													1	1				3							
171	46.14966311	-89.81552411	4	Sand	Pole				1											1				1													
172	46.1491051	-89.81552597	6	Sand	Pole				2	1			1														1				1					1		
173	46.1485471	-89.81552784	12	Muck	Pole				3				1														1				2							
174	46.1479891	-89.8155297	16		Rope				0																													
175	46.14743109	-89.81553157	15		Rope				0																													
176	46.14687309	-89.81553343	16		Rope				0																													
177	46.14631508	-89.81553529	18		Rope				0																													
178	46.14575708	-89.81553716	18		Rope				0																													
179	46.14519907	-89.81553902	17		Rope				0																													
180	46.14464107	-89.81554088	18		Rope				0																													
181	46.14408307	-89.81554275	18		Rope				0																													
182	46.14352506	-89.81554461	25			DEEP																																
183	46.14296706	-89.81554648	34			DEEP																																
184	46.14240905	-89.81554834	16		Rope				0																													
185	46.13961903	-89.81555766	8	Muck	Pole				3	2	1		2				1	1																			1		
186	46.13906102	-89.81555952	8	Muck	Pole				3				1														2				2							
187	46.13850302	-89.81556138	8	Muck	Pole				3	1																	3											
188	46.13794502	-89.81556324	5	Muck	Pole				3				1							1			1								1					2		
189	46.15356783	-89.81470814	14	Muck	Pole				1	1			1																									
190	46.15300983	-89.81471001	15	Muck	Pole				2	1			1																		1							
191	46.15245183	-89.81471188	14		Rope				2	1																					2							
192	46.15189382	-89.81471376	15	Muck	Pole				1																		1				1							
193	46.15133582	-89.81471563	13	Muck	Pole				1				1														1				1							
194	46.15077782	-89.8147175	14	Muck	Pole				2																		2											
195	46.15021981	-89.81471937	14		Rope				1	1			1														1				1							
196	46.14966181	-89.81472125	11	Sand	Pole				3	1			1														1				1							
197	46.1491038	-89.81472312	9	Sand	Pole				3				1														1				2					1		
198	46.1485458	-89.81472499	14		Rope				0																													
199	46.1479878	-89.81472686	14		Rope				1																		1											
200	46.14742979	-89.81472874	19		Rope				0																													
201	46.14687179	-89.81473061	16		Rope				0																													
202	46.14631378	-89.81473248	18		Rope				0																													
203	46.14575578	-89.81473435	19		Rope				0																													
204	46.14519778	-89.81473622	20		Rope				0																													
205	46.14463977	-89.81473809	6	Rock	Pole				0																													
206	46.14408177	-89.81473997	36			DEEP																																
207	46.14352376	-89.81474184	42			DEEP																																
208	46.14296576	-89.81474371	12	Sand	Pole				1				1																		1							
209	46.14240775	-89.81474558	3	Rock	Pole				0																													
210	46.13905973	-89.81475681	6	Muck	Pole				3	1																	1	3										

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Ceratophyllum demersum	Chara spp.	Eleocharis acicularis	Elodea canadensis	Elodea nuttallii	Equisetum fluviatile	Isoetes sp.	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum tenellum	Najas flexilis	Nymphaea odorata	Potamogeton amplifolius	Potamogeton friesii	Potamogeton gramineus	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria sp. (rosette)	Schoenoplectus acutus	Stuckenia pectinata	Utricularia intermedia	Utricularia vulgaris	Vallisneria americana	Aquatic moss	Freshwater sponge
211	46.13850172	-89.81475868	6	Muck	Pole				3	1																1	3												
212	46.15356653	-89.81390522	9	Sand	Pole				2	1																	2					1							
213	46.15300853	-89.8139071	16		Rope				1	1			1																			1							
214	46.15245052	-89.81390898	17		Rope				1	1																	1					1							
215	46.15189252	-89.81391086	16		Rope				1				1													1	1					1							
216	46.15133452	-89.81391274	14	Muck	Pole				1	1			1														1					1							
217	46.15077651	-89.81391462	14		Rope				0																														
218	46.15021851	-89.8139165	14		Rope				0																														
219	46.1496605	-89.81391838	16		Rope				0																														
220	46.1491025	-89.81392026	15		Rope				0																														
221	46.1485445	-89.81392214	18		Rope				0																														
222	46.14798649	-89.81392402	19		Rope				0																														
223	46.14742849	-89.81392591	19		Rope				0																														
224	46.14687048	-89.81392779	18		Rope				0																														
225	46.14631248	-89.81392967	21		Rope				0																														
226	46.14575448	-89.81393155	14		Rope				0																														
227	46.14519647	-89.81393343	25			DEEP																																	
228	46.14463847	-89.81393531	27			DEEP																																	
229	46.14408046	-89.81393719	0			DEEP																																	
230	46.14352246	-89.81393907	26			DEEP																																	
231	46.14296446	-89.81394094	10	Muck	Pole				2				2													1						1							
232	46.14240645	-89.81394282	0			TERRESTRIAL																																	
233	46.15356522	-89.8131023	6	Sand	Pole				1		1		1							1		1														1		
234	46.15300722	-89.81310419	14		Rope				1		1																											
235	46.15244921	-89.81310608	17		Rope				1																	1												
236	46.15189121	-89.81310797	17		Rope				2																	2												
237	46.15133321	-89.81310986	14		Rope				2	1			1													1	1					1						
238	46.1507752	-89.81311174	14		Rope				0																														
239	46.1502172	-89.81311363	16		Rope				0																														
240	46.14965919	-89.81311552	16		Rope				0																														
241	46.14910119	-89.81311741	18		Rope				1	1																													
242	46.14854319	-89.8131193	17		Rope				0																														
243	46.14798518	-89.81312119	13	Rock	Pole				0																														
244	46.14742718	-89.81312308	14		Rope				0																														
245	46.14686918	-89.81312496	19		Rope				0																														
246	46.14631117	-89.81312685	25			DEEP																																	
247	46.14575317	-89.81312874	28			DEEP																																	
248	46.14519516	-89.81313063	0			DEEP																																	
249	46.14463716	-89.81313252	0			DEEP																																	
250	46.14407915	-89.8131344	28			DEEP																																	
251	46.14352115	-89.81313629	16		Rope				0																														
252	46.14296315	-89.81313818	11	Rock	Pole				0																														
253	46.14240514	-89.81314007	5	Sand	Pole				0																														
254	46.1535639	-89.81229938	6	Sand	Pole				1	1	1									1								1								1		
255	46.1530059	-89.81230128	12	Rock	Pole				1				1					1														1						
256	46.1524479	-89.81230318	18		Rope				2																	2												
257	46.15188989	-89.81230507	16		Rope				1																	1												
258	46.15133189	-89.81230697	14		Rope				1																	1												
259	46.15077389	-89.81230887	16		Rope				0																														
260	46.15021588	-89.81231076	16		Rope				0																														
261	46.14965788	-89.81231266	18		Rope				0																														
262	46.14909988	-89.81231456	10	Rock	Pole				0																														
263	46.14854187	-89.81231645	14		Rope				0																														
264	46.14798387	-89.81231835	22		Rope				0																														
265	46.14742586	-89.81232025	23		Rope				0																														
266	46.14686786	-89.81232214	22		Rope				0																														
267	46.14630986	-89.81232404	0			DEEP																																	
268	46.14575185	-89.81232593	0			DEEP																																	
269	46.14519385	-89.81232783	0			DEEP																																	
270	46.14463584	-89.81232973	0			DEEP																																	
271	46.14407784	-89.81233162	28			DEEP																																	
272	46.14351984	-89.81233352	14		Rope				0																														
273	46.14296183	-89.81233541	13	Sand	Pole				2				1																	1		1						
274	46.14240383	-89.81233731	1	Rock	Pole				0																														
275	46.15356258	-89.81149646	6	Sand	Pole				1		1													1													1		
276	46.15300458	-89.81149837	12	Rock	Pole				1	1			1																		1							
277	46.15244658	-89.81150027	15		Rope				3																	3						1						
278	46.15188857	-89.81150218	19		Rope				2																	2						1						
279	46.15133057	-89.81150408	15		Rope				1				1													1												
280	46.15077257	-89.81150599	17		Rope				0																														

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Ceratophyllum demersum	Chara spp.	Eleocharis acicularis	Elodea canadensis	Elodea nuttallii	Equisetum fluviatile	Isoetes sp.	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum tenellum	Najas flexilis	Nymphaea odorata	Potamogeton amplifolius	Potamogeton friesii	Potamogeton gramineus	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria sp. (rosette)	Schoenoplectus acutus	Stuckenia pectinata	Utricularia intermedia	Utricularia vulgaris	Vallisneria americana	Aquatic moss	Freshwater sponge
281	46.15021456	-89.81150789	18		Rope				0																														
282	46.14965656	-89.8115098	8	Rock	Pole				0																														
283	46.14909855	-89.8115117	23		Rope				0																														
284	46.14854055	-89.81151361	24		Rope				0																														
285	46.14798255	-89.81151551	23		Rope				0																														
286	46.14742454	-89.81151742	24		Rope				0																														
287	46.14686654	-89.81151932	25			DEEP																																	
288	46.14630854	-89.81152122	0			DEEP																																	
289	46.14575053	-89.81152313	0			DEEP																																	
290	46.14519253	-89.81152503	0			DEEP																																	
291	46.14463452	-89.81152694	0			DEEP																																	
292	46.14407652	-89.81152884	0			DEEP																																	
293	46.14351851	-89.81153075	28			DEEP																																	
294	46.14296051	-89.81153265	20		Rope				0																														
295	46.15356126	-89.81069354	6	Sand	Pole				2		1		1					1		1																	1		
296	46.15300325	-89.81069546	13	Sand	Pole				1																	1												
297	46.15244525	-89.81069737	17		Rope				0																														
298	46.15188725	-89.81069928	18		Rope				1																	1												
299	46.15132924	-89.8107012	17		Rope				1																	1												
300	46.15077124	-89.81070311	17		Rope				0																														
301	46.15021324	-89.81070502	14		Rope				0																														
302	46.14965523	-89.81070693	23		Rope				0																														
303	46.14909723	-89.81070885	23		Rope				0																														
304	46.14853922	-89.81071076	25			DEEP																																	
305	46.14798122	-89.81071267	24		Rope				0																														
306	46.14742322	-89.81071459	25			DEEP																																	
307	46.14686521	-89.8107165	0			DEEP																																	
308	46.14630721	-89.81071841	0			DEEP																																	
309	46.1457492	-89.81072032	0			DEEP																																	
310	46.1451912	-89.81072224	0			DEEP																																	
311	46.1446332	-89.81072415	0			DEEP																																	
312	46.14407519	-89.81072606	0			DEEP																																	
313	46.14351719	-89.81072797	23		Rope				0																														
314	46.14295918	-89.81072988	12	Sand	Pole				0																														
315	46.15411793	-89.8098887	3	Sand	Pole				1											1				1			1						1					
316	46.15355992	-89.80989062	6	Rock	Pole				1		1							1		1				1				1				1						
317	46.15300192	-89.80989255	10	Rock	Pole				1																	1												
318	46.15244392	-89.80989447	14		Rope				0																														
319	46.15188591	-89.80989639	20		Rope				0																														
320	46.15132791	-89.80989831	18		Rope				0																														
321	46.15076991	-89.80990023	18		Rope				0																														
322	46.1502119	-89.80990215	24		Rope				0																														
323	46.1496539	-89.80990407	24		Rope				0																														
324	46.1490959	-89.80990599	25			DEEP																																	
325	46.14853789	-89.80990791	0			DEEP																																	
326	46.14797989	-89.80990984	25			DEEP																																	
327	46.14742188	-89.80991176	0			DEEP																																	
328	46.14686388	-89.80991368	0			DEEP																																	
329	46.14630588	-89.8099156	0			DEEP																																	
330	46.14574787	-89.80991752	0			DEEP																																	
331	46.14518987	-89.80991944	0			DEEP																																	
332	46.14463186	-89.80992136	0			DEEP																																	
333	46.14407386	-89.80992328	0			DEEP																																	
334	46.14351586	-89.8099252	27			DEEP																																	
335	46.14295785	-89.80992712	10	Rock	Pole				0																														
336	46.15411659	-89.80908578	6	Sand	Pole				2								1			1			1	1				1									1		
337	46.15355858	-89.80908771	9	Muck	Pole				1																			1										
338	46.15300058	-89.80908963	11	Muck	Pole				2	1			1					2								1						1						
339	46.15244258	-89.80909156	12	Sand	Pole				0																														
340	46.15188458	-89.80909349	7	Rock	Pole				0																														
341	46.15132657	-89.80909542	14		Rope				0																														
342	46.15076857	-89.80909735	30			DEEP																																	
343	46.15021056	-89.80909928	25			DEEP																																	
344	46.14965256	-89.80910121	24		Rope				0																														
345	46.14909456	-89.80910314	25			DEEP																																	
346	46.14853655	-89.80910507	0			DEEP																																	
347	46.14797855	-89.809107	0			DEEP																																	
348	46.14742055	-89.80910893	0			DEEP																																	
349	46.14686254	-89.80911086	0			DEEP																																	
350	46.14630454	-89.80911278	0			DEEP																																	

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Ceratophyllum demersum	Chara spp.	Eleocharis acicularis	Elodea canadensis	Elodea nuttallii	Equisetum fluviatile	Isoetes sp.	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum tenellum	Najas flexilis	Nymphaea odorata	Potamogeton amplifolius	Potamogeton friesii	Potamogeton gramineus	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria sp. (rosette)	Schoenoplectus acutus	Stuckenia pectinata	Utricularia intermedia	Utricularia vulgaris	Vallisneria americana	Aquatic moss	Freshwater sponge
351	46.14574653	-89.80911471	0			DEEP																																	
352	46.14518853	-89.80911664	0			DEEP																																	
353	46.14463053	-89.80911857	0			DEEP																																	
354	46.14407252	-89.8091205	0			DEEP																																	
355	46.14351452	-89.80912243	27			DEEP																																	
356	46.14295651	-89.80912436	18		Rope				0																														
357	46.15411524	-89.80828285	10	Muck	Pole				2	1																		1				1							
358	46.15355724	-89.80828479	14	Muck	Pole				2	1															1	2													
359	46.15299924	-89.80828672	12	Muck	Pole				2	1																		1				1							
360	46.15244123	-89.80828866	14		Rope				0																														
361	46.15188323	-89.8082906	19		Rope				0																														
362	46.15132523	-89.80829254	27			DEEP																																	
363	46.15076722	-89.80829447	0			DEEP																																	
364	46.15020922	-89.80829641	25			DEEP																																	
365	46.14965122	-89.80829835	25			DEEP																																	
366	46.14909321	-89.80830029	0			DEEP																																	
367	46.14853521	-89.80830222	0			DEEP																																	
368	46.14797721	-89.80830416	0			DEEP																																	
369	46.1474192	-89.8083061	0			DEEP																																	
370	46.1468612	-89.80830803	0			DEEP																																	
371	46.1463032	-89.80830997	0			DEEP																																	
372	46.14574519	-89.80831191	0			DEEP																																	
373	46.14518719	-89.80831384	0			DEEP																																	
374	46.14462918	-89.80831578	0			DEEP																																	
375	46.14407118	-89.80831772	0			DEEP																																	
376	46.14351318	-89.80831965	27			DEEP																																	
377	46.14295517	-89.80832159	19		Rope				0																														
378	46.15411389	-89.80747992	8	Muck	Pole				2	1	1		1					1		1								1											
379	46.15355589	-89.80748187	15		Rope				1																	1						1	1						
380	46.15299789	-89.80748381	21		Rope				0																														
381	46.15243989	-89.80748576	22		Rope				0																														
382	46.15188188	-89.8074877	26			DEEP																																	
383	46.15132388	-89.80748965	26			DEEP																																	
384	46.15076588	-89.8074916	0			DEEP																																	
385	46.15020787	-89.80749354	0			DEEP																																	
386	46.14964987	-89.80749549	0			DEEP																																	
387	46.14909186	-89.80749743	0			DEEP																																	
388	46.14853386	-89.80749938	0			DEEP																																	
389	46.14797586	-89.80750132	0			DEEP																																	
390	46.14741785	-89.80750327	0			DEEP																																	
391	46.14685985	-89.80750521	0			DEEP																																	
392	46.14630185	-89.80750716	0			DEEP																																	
393	46.14574384	-89.8075091	0			DEEP																																	
394	46.14518584	-89.80751105	0			DEEP																																	
395	46.14462783	-89.80751299	0			DEEP																																	
396	46.14406983	-89.80751494	0			DEEP																																	
397	46.14351183	-89.80751688	29			DEEP																																	
398	46.14295382	-89.80751883	10	Rock	Pole				0																														
399	46.15411254	-89.806677	7	Muck	Pole				2									1										2									1		1
400	46.15355454	-89.80667895	12	Muck	Pole				1																			1				1					1		
401	46.15299653	-89.8066809	22		Rope				0																														
402	46.15243853	-89.80668286	24		Rope				0																														
403	46.15188053	-89.80668481	26			DEEP																																	
404	46.15132252	-89.80668676	0			DEEP																																	
405	46.15076452	-89.80668872	0			DEEP																																	
406	46.15020652	-89.80669067	0			DEEP																																	
407	46.14964851	-89.80669262	0			DEEP																																	
408	46.14909051	-89.80669458	0			DEEP																																	
409	46.14853251	-89.80669653	0			DEEP																																	
410	46.1479745	-89.80669848	0			DEEP																																	
411	46.1474165	-89.80670044	0			DEEP																																	
412	46.1468585	-89.80670239	0			DEEP																																	
413	46.14630049	-89.80670434	0			DEEP																																	
414	46.14574249	-89.8067063	0			DEEP																																	
415	46.14518448	-89.80670825	0			DEEP																																	
416	46.14462648	-89.8067102	0			DEEP																																	
417	46.14406848	-89.80671216	0			DEEP																																	
418	46.14351047	-89.80671411	28			DEEP																																	
419	46.15411118	-89.80587407	4	Sand	Pole				1				1							1								1		1							1		
420	46.15355318	-89.80587603	8	Muck	Pole				2	1			1															2				1					1		1

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Ceratophyllum demersum	Chara spp.	Eleocharis acicularis	Elodea canadensis	Elodea nuttallii	Equisetum fluviatile	Isoetes sp.	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum tenellum	Najas flexilis	Nymphaea odorata	Potamogeton amplifolius	Potamogeton friesii	Potamogeton gramineus	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria sp. (rosette)	Schoenoplectus acutus	Stuckenia pectinata	Utricularia intermedia	Utricularia vulgaris	Vallisneria americana	Aquatic moss	Freshwater sponge
421	46.15299517	-89.80587799	18		Rope				1		1																												
422	46.15243717	-89.80587995	22		Rope				0																														
423	46.15187917	-89.80588192	27			DEEP																																	
424	46.15132116	-89.80588388	0			DEEP																																	
425	46.15076316	-89.80588584	0			DEEP																																	
426	46.15020516	-89.8058878	0			DEEP																																	
427	46.14964715	-89.80588976	0			DEEP																																	
428	46.14908915	-89.80589172	0			DEEP																																	
429	46.14853115	-89.80589369	0			DEEP																																	
430	46.14797314	-89.80589565	0			DEEP																																	
431	46.14741514	-89.80589761	0			DEEP																																	
432	46.14685714	-89.80589957	0			DEEP																																	
433	46.14629913	-89.80590153	0			DEEP																																	
434	46.14574113	-89.80590349	0			DEEP																																	
435	46.14518312	-89.80590545	0			DEEP																																	
436	46.14462512	-89.80590741	0			DEEP																																	
437	46.14406712	-89.80590937	0			DEEP																																	
438	46.14350911	-89.80591134	29			DEEP																																	
439	46.15355181	-89.80507311	6	Muck	Pole				2	1			1				1			1			1					1					1					1		
440	46.15299381	-89.80507508	10	Muck	Pole				2				1														1	1									1		
441	46.1524358	-89.80507705	23		Rope				0																														
442	46.1518778	-89.80507902	25			DEEP																																	
443	46.1513198	-89.80508099	0			DEEP																																	
444	46.15076179	-89.80508296	0			DEEP																																	
445	46.15020379	-89.80508493	0			DEEP																																	
446	46.14964579	-89.8050869	0			DEEP																																	
447	46.14908778	-89.80508887	0			DEEP																																	
448	46.14852978	-89.80509084	0			DEEP																																	
449	46.14797178	-89.80509281	0			DEEP																																	
450	46.14741377	-89.80509478	0			DEEP																																	
451	46.14685577	-89.80509675	0			DEEP																																	
452	46.14629777	-89.80509872	0			DEEP																																	
453	46.14573976	-89.80510069	0			DEEP																																	
454	46.14518176	-89.80510266	0			DEEP																																	
455	46.14462375	-89.80510462	0			DEEP																																	
456	46.14406575	-89.80510659	0			DEEP																																	
457	46.14350775	-89.80510856	27			DEEP																																	
458	46.14294974	-89.80511053	2	Sand	Pole				1																								1							
459	46.15299243	-89.80427217	8	Muck	Pole				2																			1									1		1
460	46.15243443	-89.80427415	10	Muck	Pole				2				1														1	2									1		
461	46.15187643	-89.80427613	21		Rope				1		1																												
462	46.15131843	-89.80427811	27			DEEP																																	
463	46.15076042	-89.80428008	0			DEEP																																	
464	46.15020242	-89.80428206	0			DEEP																																	
465	46.14964442	-89.80428404	0			DEEP																																	
466	46.14908641	-89.80428602	0			DEEP																																	
467	46.14852841	-89.80428799	0			DEEP																																	
468	46.1479704	-89.80428997	0			DEEP																																	
469	46.1474124	-89.80429195	0			DEEP																																	
470	46.1468544	-89.80429393	0			DEEP																																	
471	46.14629639	-89.8042959	0			DEEP																																	
472	46.14573839	-89.80429788	0			DEEP																																	
473	46.14518039	-89.80429986	0			DEEP																																	
474	46.14462238	-89.80430184	0			DEEP																																	
475	46.14406438	-89.80430381	30			DEEP																																	
476	46.14350637	-89.80430579	8	Rock	Pole				0																														
477	46.15243305	-89.80347125	8	Muck	Pole				1																			1									1		
478	46.15187505	-89.80347323	10	Muck	Pole				2				1															2					1				1		
479	46.15131705	-89.80347522	26			DEEP																																	
480	46.15075904	-89.80347721	0			DEEP																																	
481	46.15020104	-89.80347919	0			DEEP																																	
482	46.14964304	-89.80348118	0			DEEP																																	
483	46.14908503	-89.80348316	0			DEEP																																	
484	46.14852703	-89.80348515	0			DEEP																																	
485	46.14796903	-89.80348713	0			DEEP																																	
486	46.14741102	-89.80348912	0			DEEP																																	
487	46.14685302	-89.80349111	0			DEEP																																	
488	46.14629502	-89.80349309	0			DEEP																																	
489	46.14573701	-89.80349508	0			DEEP																																	
490	46.14517901	-89.80349706	0			DEEP																																	

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Ceratophyllum demersum	Chara spp.	Eleocharis acicularis	Elodea canadensis	Elodea nuttallii	Equisetum fluviatile	Isoetes sp.	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum tenellum	Najas flexilis	Nymphaea odorata	Potamogeton amplifolius	Potamogeton friesii	Potamogeton gramineus	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria sp. (rosette)	Schoenoplectus acutus	Stuckenia pectinata	Utricularia intermedia	Utricularia vulgaris	Vallisneria americana	Aquatic moss	Freshwater sponge
491	46.14462101	-89.80349905	0			DEEP																																	
492	46.144063	-89.80350103	32			DEEP																																	
493	46.143505	-89.80350302	22		Rope				0																														
494	46.15187367	-89.80267034	7	Sand	Pole				2	2	1									1							1									1			
495	46.15131566	-89.80267233	23		Rope				1																1						1								
496	46.15075766	-89.80267433	0			DEEP																																	
497	46.15019966	-89.80267632	0			DEEP																																	
498	46.14964165	-89.80267832	0			DEEP																																	
499	46.14908365	-89.80268031	0			DEEP																																	
500	46.14852565	-89.8026823	0			DEEP																																	
501	46.14796764	-89.8026843	0			DEEP																																	
502	46.14740964	-89.80268629	0			DEEP																																	
503	46.14685164	-89.80268828	0			DEEP																																	
504	46.14629363	-89.80269028	0			DEEP																																	
505	46.14573563	-89.80269227	0			DEEP																																	
506	46.14517763	-89.80269427	0			DEEP																																	
507	46.14461962	-89.80269626	0			DEEP																																	
508	46.14406162	-89.80269825	32			DEEP																																	
509	46.14350361	-89.80270025	5	Rock	Pole				0																														
510	46.15131428	-89.80186945	7	Sand	Pole				2								1										1									1			
511	46.15075627	-89.80187145	28			DEEP																																	
512	46.15019827	-89.80187345	0			DEEP																																	
513	46.14964027	-89.80187545	0			DEEP																																	
514	46.14908226	-89.80187746	31			DEEP																																	
515	46.14852426	-89.80187946	0			DEEP																																	
516	46.14796626	-89.80188146	0			DEEP																																	
517	46.14740825	-89.80188346	0			DEEP																																	
518	46.14685025	-89.80188546	0			DEEP																																	
519	46.14629225	-89.80188747	33			DEEP																																	
520	46.14573424	-89.80188947	30			DEEP																																	
521	46.14517624	-89.80189147	30			DEEP																																	
522	46.14461823	-89.80189347	32			DEEP																																	
523	46.14406023	-89.80189547	29			DEEP																																	
524	46.15075488	-89.80106857	6	Sand	Pole				2	1							1	1		1		1					1	1								1			
525	46.15019688	-89.80107058	29			DEEP																																	
526	46.14963887	-89.80107259	32			DEEP																																	
527	46.14908087	-89.8010746	0			DEEP																																	
528	46.14852287	-89.80107661	34			DEEP																																	
529	46.14796486	-89.80107862	30			DEEP																																	
530	46.14740686	-89.80108063	31			DEEP																																	
531	46.14684885	-89.80108264	28			DEEP																																	
532	46.14629085	-89.80108465	18		Rope				1		1		1													1													
533	46.14573285	-89.80108666	12	Sand	Pole				3	1			1					1								3													
534	46.14517484	-89.80108867	11	Muck	Pole				2				1					1		1						1													
535	46.14461684	-89.80109068	6	Sand	Pole				2				1							2								1	1		1								
536	46.15019548	-89.80026771	3	Sand	Pole				2				1							2			1	1						1							1		
537	46.14963747	-89.80026973	23		Rope				1																							1						
538	46.14907947	-89.80027175	28			DEEP																																	
539	46.14852147	-89.80027377	17		Rope				1																	1													
540	46.14796346	-89.80027579	6	Sand	Pole				2	1			1							2									1									
541	46.14740546	-89.8002778	5	Sand	Pole				1																					1								
542	46.14684745	-89.80027982	5	Sand	Pole				2											1				1													1		
543	46.14628945	-89.80028184	4	Sand	Pole				2											2				1													1		

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Brasenia schreberi	Ceratophyllum demersum	Chara spp.	Dulichium arundinaceum	Eleocharis canadensis	Heteranthera dubia	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton epihydrus	Potamogeton foliosus	Potamogeton friesii	Potamogeton gramineus	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria sp. (rosette)	Sagittaria rigida	Trypha spp.	Utricularia intermedia	Utricularia vulgaris	Vallisneria americana	Zizania sp.	Aquatic moss	Potamogeton berchtoldii
1	46.13037990000	-89.83357613000	4	Muck	Pole				1			1								1					1												1					
2	46.13004690000	-89.83357713000	3	Muck	Pole				2			1						1																1				1					
3	46.12971389000	-89.83357814000	3	Muck	Pole				2			1						1		1					1												1					
4	46.13037920000	-89.83309717000	2	Muck	Pole				2			1						1																			1					
5	46.13004620000	-89.83309818000	3	Muck	Pole				3	1								1	1	1									2								1	1				
6	46.12971320000	-89.83309918000	3	Muck	Pole				1			1							1	1					1												1				1	
7	46.13037850000	-89.83261821000	2	Muck	Pole				1									1																1					1			
8	46.13004550000	-89.83261922000	3	Muck	Pole				1											1																	1				
9	46.12971250000	-89.83262023000	3	Muck	Pole				1	1		1						1							1				1								1		1			
10	46.13004480000	-89.83214026000	4	Muck	Pole				2									1	1	1	1															1	1				
11	46.12971179000	-89.83214127000	3	Muck	Pole				1	1								1		1					1												1	1				
12	46.13071010000	-89.83165927000	2	Muck	Pole				1		1	1						1				1					1	1									1					
13	46.13037710000	-89.83166029000	3	Muck	Pole				1											1																	1				1	
14	46.13004409000	-89.83166130000	0			NONNAVIGABLE (PLANTS)																																					
15	46.13104240000	-89.83117929000	4	Muck	Pole				2	1	1			1				1		1									1								1	1				
16	46.13070939000	-89.83118031000	3	Muck	Pole				1											1																				1		
17	46.13037639000	-89.83118133000	1	Muck	Pole				1																										1			1		1		
18	46.13104169000	-89.83070033000	4	Muck	Pole				1	1		1		1				1		1									1					1				1	1			
19	46.13070869000	-89.83070135000	1	Muck	Pole				1				1																						1	1						
20	46.13104098000	-89.83022136000	4	Muck	Pole				1									1		1									1									1	1			
21	46.13070798000	-89.83022238000	3	Muck	Pole				3									2								1								1					1			
22	46.13104027000	-89.82974239000	5	Muck	Pole				3			1					1	2																					1			
23	46.13070726000	-89.82974342000	3	Muck	Pole				3			3						1							1										1							
24	46.13037426000	-89.82974444000	4	Muck	Pole				2							1		1																				1	1			
25	46.13137256000	-89.82926240000	4	Muck	Pole				3			1						3											1												
26	46.13103955000	-89.82926343000	4	Muck	Pole				2			1						2		1																1						
27	46.13070655000	-89.82926445000	4	Muck	Pole				1			1						1		1								0													
28	46.13037354000	-89.82926548000	3	Muck	Pole				1			1																							1				1	1			
29	46.13237085000	-89.82878033000	4	Muck	Pole				2									2		1															1					1			
30	46.13203785000	-89.82878136000	4	Muck	Pole				1									1																					1			
31	46.13170484000	-89.82878240000	4	Muck	Pole				1									1										1						1								
32	46.13137184000	-89.82878343000	4	Muck	Pole				2									1											1										1			
33	46.13103884000	-89.82878446000	3	Sand	Pole				3									3										1										1			
34	46.13336914000	-89.82829825000	4	Muck	Pole				2									2		1																		1			
35	46.13303614000	-89.82829928000	5	Muck	Pole				3																			1	1									2			
36	46.13270313000	-89.82830032000	5	Muck	Pole				1		1	1						1			1																	1			
37	46.13237013000	-89.82830135000	5	Muck	Pole				1			1									1																	1			
38	46.13203713000	-89.82830239000	5	Muck	Pole				1		1																		1												
39	46.13170412000	-89.82830342000	5	Sand	Pole				1								1	1											1					1				1	1			
40	46.13137112000	-89.82830446000	5	Sand	Pole				1									1										1	1												
41	46.13103812000	-89.82830549000	3	Sand	Pole				3									3							1								1								
42	46.13070511000	-89.82830653000	4	Muck	Pole				0																																
43	46.13037211000	-89.82830756000	4	Sand	Pole				1									1							1																
44	46.13370142000	-89.82781822000	6	Muck	Pole				1																														1			
45	46.13336842000	-89.82781926000	7	Muck	Pole				0																																
46	46.13303542000	-89.82782030000	7	Muck	Pole				1																				1												
47	46.13270241000	-89.82782134000	7	Muck	Pole				1		1															1			1					1								
48	46.13236941000	-89.82782238000	6	Muck	Pole				2		2			1			1																								
49	46.13170340000	-89.82782445000	4	Muck	Pole				3			1						1									1	1						1								
50	46.13137040000	-89.82782549000	4	Muck	Pole				1																									1								
51	46.13103740000	-89.82782653000	4	Sand	Pole				2												1																	1			
52	46.13070439000	-89.82782756000	5	Sand	Pole				2									1			1								1									1			
53	46.13037139000	-89.82782860000	6	Muck	Pole				1																				1												
54	46.13436671000	-89.82733715000	4	Muck	Pole				2					2				1																1					1			
55	46.13403371000	-89.82733819000	7	Muck	Pole				2		1																		2												
56	46.13370070000	-89.82733924000	7	Muck	Pole				1		1																		1												
57	46.13336770000	-89.82734028000	7	Muck	Pole				2		1			1															2					1								
58	46.13303470000	-89.82734132000	7	Muck	Pole				2					1															2					1								
59	46.13270169000	-89.82734236000	7	Muck	Pole				1		1																		1												
60	46.13236869000	-89.82734340000	7	Muck	Pole				2																				2												
61	46.13203569000	-89.82734444000	5	Muck	Pole				3		3			1													1		1												
62	46.13136968000	-89.82734652000	2	Sand	Pole				1			1		1				1									1															
63	46.13103667000	-89.82734756000	5	Muck	Pole				3					1															1					1					1			
64	46.13070367000	-89.82734860000	4	Muck	Pole				2									1											1					1					1			
65	46.13436598000	-89.82685816000	6	Muck	Pole				2		1			1															1					1								
66	46.13403298000	-89.82685920000	8	Muck	Pole				2																				2					1								
67	46.13369998000	-89.82686025000	7	Muck	Pole				0																																
68	46.13336697000	-89.82686129000	7	Muck	Pole				1					1																											
69	46.13303397000	-89.82686233000	7	Muck	Pole				2					1															2												
70	46.13270097000	-89.82686338000	7	Muck	Pole				2																				1												
71	46.13236796000	-89.82686442000	6	Muck	Pole				2																				2					1								
72	46.13203496000	-89.82686546000	4	Sand	Pole				2			1		1				2						1										1								
73	46.13170196000	-89.82686651000	6	Muck	Pole				3					2															1					1								

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Brasenia schreberi	Ceratophyllum demersum	Chara spp.	Dulichium arundinaceum	Eleocharis palustris	Heteranthera dubia	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton epihydrus	Potamogeton foliosus	Potamogeton friesii	Potamogeton gramineus	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria sp. (rosette)	Sagittaria rigida	Typha spp.	Utricularia intermedia	Utricularia vulgaris	Vallisneria americana	Zizania sp.	Aquatic moss	Potamogeton berchtoldii
74	46.13136895000	-89.82686755000	5	Muck	Pole				2					1															1				1						1			
75	46.13103595000	-89.82686859000	4	Muck	Pole				1		1							1		1													1									
76	46.13702928000	-89.82637079000	2	Sand	Pole				1		1			1												1			1							1					
77	46.13669628000	-89.82637184000	2	Sand	Pole				1					1															1												
78	46.13636328000	-89.82637288000	2	Sand	Pole				2					1				1																1							
79	46.13469826000	-89.82637812000	6	Muck	Pole				2																			1	2				1								
80	46.13436526000	-89.82637916000	9	Muck	Pole				2		1			1												1			2				1								
81	46.13403225000	-89.82638021000	9	Muck	Pole				2		1															2			1												
82	46.13369925000	-89.82638126000	8	Muck	Pole				2					1															2												
83	46.13336625000	-89.82638230000	7	Muck	Pole				2																				2				1								
84	46.13136823000	-89.82638858000	4	Sand	Pole				3		1							3																					1			
85	46.13802757000	-89.82588862000	0			NONNAVIGABLE (PLANTS)																																				
86	46.13769456000	-89.82588967000	0			NONNAVIGABLE (PLANTS)																																				
87	46.13736156000	-89.82589072000	4	Muck	Pole				2					1				1	1	1							2		1					1							
88	46.13702856000	-89.82589177000	6	Muck	Pole				3		1			1							1					1			1					1					2		
89	46.13669555000	-89.82589282000	6	Muck	Pole				1					1							1								1					1					1		
90	46.13636255000	-89.82589387000	6	Muck	Pole				2												1								2				1					1		
91	46.13602955000	-89.82589492000	4	Muck	Pole				2									1										1	1				1					1		
92	46.13569654000	-89.82589597000	5	Muck	Pole				2					1			1	1						1									1					2		
93	46.13536354000	-89.82589702000	7	Muck	Pole				2		1																		2				1							
94	46.13503054000	-89.82589807000	10	Muck	Pole				2					1															2				1							
95	46.13469753000	-89.82589912000	11	Muck	Pole				2																				2				1							
96	46.13436453000	-89.82590017000	11	Muck	Pole				2		1			1												1			2												
97	46.13403153000	-89.82590122000	11	Muck	Pole				3		1															1			2				1								
98	46.13369852000	-89.82590227000	11	Muck	Pole				3		1															2															
99	46.13336552000	-89.82590332000	7	Muck	Pole				3																				3				1					1		
100	46.13303252000	-89.82590437000	4	Sand	Pole				2					2				1															1					1		
101	46.13835984000	-89.82540854000	0			NONNAVIGABLE (PLANTS)																																				
102	46.13802683000	-89.82540960000	0			NONNAVIGABLE (PLANTS)																																				
103	46.13769383000	-89.82541065000	0			NONNAVIGABLE (PLANTS)																																				
104	46.13736083000	-89.82541170000	5	Muck	Pole				1					1	1				1					1					1					1					1		
105	46.13702783000	-89.82541275000	7	Muck	Pole				2																	2			1				1							
106	46.13669482000	-89.82541381000	8	Muck	Pole				3																	3			1											
107	46.13636182000	-89.82541486000	9	Muck	Pole				2																				2				1							
108	46.13602882000	-89.82541591000	8	Muck	Pole				2					1															2				1							
109	46.13569581000	-89.82541696000	10	Muck	Pole				2					1															1											
110	46.13536281000	-89.82541802000	10	Muck	Pole				2																				2											
111	46.13502981000	-89.82541907000	11	Muck	Pole				3								1									1			3				1							
112	46.13469680000	-89.82542012000	12	Muck	Pole				2		1																		2				1							
113	46.13436380000	-89.82542117000	12	Muck	Pole				2					1												1		1	1												
114	46.13403080000	-89.82542223000	12	Muck	Pole				3		1																		2				2							
115	46.13369779000	-89.82542328000	10	Muck	Pole				2																	2			1											
116	46.13336479000	-89.82542433000	7	Muck	Pole				3		1			1															3				1							
117	46.13303179000	-89.82542538000	5	Muck	Pole				2		1			1														1	1				1							
118	46.13736010000	-89.82493268000	7	Muck	Pole				2																				2				1					1		
119	46.13702709000	-89.82493374000	9	Muck	Pole				2		1															1			2				1							
120	46.13669409000	-89.82493479000	10	Muck	Pole				2																	1			1											
121	46.13636109000	-89.82493585000	12	Muck	Pole				2		1																		2									1		
122	46.13602808000	-89.82493690000	11	Muck	Pole				3		1																		3											
123	46.13569508000	-89.82493796000	14		Rope				3		1															1			2				1							
124	46.13536208000	-89.82493901000	13		Rope				3		1																		1				3							
125	46.13502907000	-89.82494007000	13	Muck	Pole				3																	3			1				1							
126	46.13469607000	-89.82494112000	13	Muck	Pole				3		1																		3				1							
127	46.13436307000	-89.82494218000	13	Muck	Pole				3		3															1			1				1							
128	46.13403006000	-89.82494323000	10	Muck	Pole				3		1																		1				3							
129	46.13369706000	-89.82494429000	8	Muck	Pole				2												1								2											
130	46.13336406000	-89.82494534000	7	Muck	Pole				2		1																		1				1							
131	46.13735936000	-89.82445366000	7	Muck	Pole				2																			1	2				1							
132	46.13702636000	-89.82445472000	11	Muck	Pole				2		1															1			2				1							
133	46.13669335000	-89.82445578000	12	Muck	Pole				2																	1			1											
134	46.13636035000	-89.82445683000	13	Muck	Pole				2		1															1							1							
135	46.13602735000	-89.82445789000	13	Muck	Pole				2		1																		1				1							
136	46.13569435000	-89.82445895000	15	Muck	Pole				2		2																						1							
137	46.13536134000	-89.82446001000	16		Rope				2		1																		1				2							
138	46.13502834000	-89.82446107000	14	Muck	Pole				1																				1											1
139	46.13469534000	-89.82446212000	13	Muck	Pole				3		1															1			1				3							
140	46.13436233000	-89.82446318000	11	Muck	Pole				2		2																		1				1							
141	46.13402933000	-89.82446424000	9	Muck	Pole				3																				1				3							
142	46.13369633000	-89.82446530000	6	Muck	Pole				2																			1	2				1					1		
143	46.13769163000	-89.82397358000	4	Sand	Pole				2									1						1			2			1							1			
144	46.13735862000	-89.82397464000	8	Muck	Pole				2					1							1							1	2											
145	46.13702562000	-89.82397570000	13	Muck	Pole				2																	2			1											
146	46.13669262000	-89.82397676000	13	Muck	Pole				2																	2			1											

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Brasenia schreberi	Ceratophyllum demersum	Chara spp.	Dulichium arundinaceum	Eleocharis canadensis	Heteranthera dubia	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton epihydrus	Potamogeton foliosus	Potamogeton friesii	Potamogeton gramineus	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria sp. (rosette)	Sagittaria rigida	Trypha spp.	Utricularia intermedia	Utricularia vulgaris	Vallisneria americana	Zizania sp.	Aquatic moss	Potamogeton berchtoldii
147	46.13635961000	-89.82397782000	14		Rope				2																	2							1									
148	46.13602661000	-89.82397888000	15		Rope				1																	1																
149	46.13569361000	-89.82397994000	16		Rope				2		1																						2									1
150	46.13536061000	-89.82398100000	15		Rope				1					1																											1
151	46.13502760000	-89.82398207000	12	Muck	Pole				3		1															2			1												
152	46.13469460000	-89.82398313000	10	Muck	Pole				2																				2												
153	46.13436160000	-89.82398419000	9	Muck	Pole				2																				2												
154	46.13835690000	-89.82349243000	3	Sand	Pole				0																																
155	46.13769089000	-89.82349455000	4	Sand	Pole				2					1			1	1								1			1				1						1			
156	46.13735789000	-89.82349562000	6	Muck	Pole				2		1										1					1		1	2				1						1			
157	46.13702488000	-89.82349668000	13	Muck	Pole				2																	2															
158	46.13669188000	-89.82349775000	14		Rope				3		2															2							1								
159	46.13635888000	-89.82349881000	15		Rope				1																	1															
160	46.13602587000	-89.82349987000	15		Rope				1		1															1							1								
161	46.13569287000	-89.82350094000	16						1																				1				1								
162	46.13535987000	-89.82350200000	13	Muck	Pole				2					1															2				1								
163	46.13502686000	-89.82350306000	10	Muck	Pole				2		1															1			2				1								
164	46.13469386000	-89.82350413000	8	Muck	Pole				2																				2										1		
165	46.13769015000	-89.82301553000	4	Sand	Pole				2		1			1				1								1			1				1						1			
166	46.13735715000	-89.82301660000	7	Muck	Pole				2		1										1							1	2												
167	46.13702414000	-89.82301766000	13	Muck	Pole				2																	2															
168	46.13669114000	-89.82301873000	15		Rope				2		2															1							1								
169	46.13635814000	-89.82301980000	17		Rope				0																																
170	46.13602513000	-89.82302086000	17		Rope				1																	1															1
171	46.13569213000	-89.82302193000	16		Rope				1																								1								
172	46.13535913000	-89.82302300000	12	Muck	Pole				2																				2				1								
173	46.13502612000	-89.82302406000	5	Sand	Pole				2		1			1			1	1											1		1							1			
174	46.13768941000	-89.82253651000	5	Sand	Pole				3		3			1														1	1				1						1			
175	46.13735640000	-89.82253757000	10	Muck	Pole				2																				2												
176	46.13702340000	-89.82253864000	13	Muck	Pole				2		1															2															
177	46.13669040000	-89.82253971000	14		Rope				1																	1															
178	46.13635739000	-89.82254078000	17		Rope				2		1															2	1						1								
179	46.13602439000	-89.82254185000	17		Rope				2		1															1															1
180	46.13569139000	-89.82254292000	13	Muck	Pole				2		1															1			1				1								
181	46.13535838000	-89.82254399000	11	Muck	Pole				2		1			1															2				1								
182	46.13735566000	-89.82205855000	8	Muck	Pole				2												1								1				2								
183	46.13702265000	-89.82205963000	12	Muck	Pole				3		1			1												1			2												
184	46.13668965000	-89.82206070000	14		Rope				2																	2							1								
185	46.13635665000	-89.82206177000	14		Rope				2		2															1	1														
186	46.13602365000	-89.82206284000	17		Rope				2		1			2																											1
187	46.13569064000	-89.82206392000	13	Sand	Pole				2		1			1														1	2				1								
188	46.13735491000	-89.82157953000	8	Muck	Pole				2		1																		2				1								
189	46.13702191000	-89.82158061000	12	Muck	Pole				3		1															3			1				1								
190	46.13668890000	-89.82158168000	14	Muck	Pole				2		1																						2								
191	46.13635590000	-89.82158276000	14	Muck	Pole				3		3															1			1				1								
192	46.13602290000	-89.82158383000	12	Muck	Pole				2		1																		1				1								
193	46.13568990000	-89.82158491000	0			TERRESTRIAL																																				
194	46.13735416000	-89.82110051000	7	Muck	Pole				2																				2												
195	46.13702116000	-89.82110159000	10	Muck	Pole				3																				3				1								
196	46.13668816000	-89.82110267000	13	Muck	Pole				2		1															1															
197	46.13635515000	-89.82110375000	14	Muck	Pole				1		1															1			1												
198	46.13602215000	-89.82110483000	13	Muck	Pole				2		1															2															
199	46.13568915000	-89.82110590000	5	Sand	Pole				2		1			1																	1		1								
200	46.13702041000	-89.82062257000	8	Muck	Pole				3																				3				1								
201	46.13668741000	-89.82062365000	10	Muck	Pole				3																	1			3												
202	46.13635440000	-89.82062473000	11	Muck	Pole				3		1			1															3				1								
203	46.13602140000	-89.82062582000	12	Muck	Pole				2		1															2															1
204	46.13568840000	-89.82062690000	4	Sand	Pole				2		2			1																									1			
205	46.13668665000	-89.82014464000	8	Muck	Pole				2					1															2												
206	46.13635365000	-89.82014572000	8	Muck	Pole				3		2			1												1			1				1								
207	46.13602065000	-89.82014681000	8	Muck	Pole				2		2																	1	1				1						1			

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Ceratophyllum demersum	Chara spp.	Eleocharis acicularis	Elodea canadensis	Elodea nuttallii	Equisetum fluviatile	Isoetes sp.	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum tenellum	Najas flexilis	Nymphaea odorata	Potamogeton amplifolius	Potamogeton friesii	Potamogeton gramineus	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria sp. (rosette)	Schoenoplectus acutus	Stuckenia pectinata	Utricularia intermedia	Utricularia vulgaris	Vallisneria americana	Aquatic moss	Freshwater sponge
1	46.15023254	-89.82274808	0			NONNAVIGABLE (PLANTS)																																	
2	46.14967454	-89.82274987	0			NONNAVIGABLE (PLANTS)																																	
3	46.14074647	-89.82277853	6	Sand	Pole				3				1									1						2				1							
4	46.14018846	-89.82278032	8	Muck	Pole				3																			3											
5	46.13963046	-89.82278211	10	Muck	Pole				2	1			1												1			1											
6	46.13907245	-89.8227839	8	Muck	Pole				2	1																		2									1		
7	46.13851445	-89.82278569	0			TERRESTRIAL																																	
8	46.1507893	-89.82194341	0			NONNAVIGABLE (PLANTS)																																	
9	46.1502313	-89.82194521	0			NONNAVIGABLE (PLANTS)																																	
10	46.14967329	-89.82194701	0			NONNAVIGABLE (PLANTS)																																	
11	46.14130323	-89.82197399	10	Sand	Pole				3	1			1					2														1							
12	46.14074522	-89.82197579	12	Muck	Pole				2																			2											
13	46.14018722	-89.82197759	9	Muck	Pole				3																			3											
14	46.13962921	-89.82197939	14	Muck	Pole				1	1			1												1							1							
15	46.13907121	-89.82198119	9	Muck	Pole				3																			3				1							
16	46.1385132	-89.82198299	6	Muck	Pole				3	1	1																1					1					2		
17	46.15134605	-89.82113873	0			NONNAVIGABLE (PLANTS)																																	
18	46.15078805	-89.82114053	0			NONNAVIGABLE (PLANTS)																																	
19	46.15023004	-89.82114234	0			NONNAVIGABLE (PLANTS)																																	
20	46.14967204	-89.82114415	0			NONNAVIGABLE (PLANTS)																																	
21	46.14576601	-89.8211568	1	Sand	Pole				3	1			1							3						1			1			1							
22	46.14185998	-89.82116945	7	Sand	Pole				3				1															3											
23	46.14130197	-89.82117125	14		Rope				1				1													1		1											
24	46.14074397	-89.82117306	13	Muck	Pole				2				1																			1							
25	46.14018596	-89.82117487	13	Muck	Pole				3																		1					3							
26	46.13962796	-89.82117667	14	Muck	Pole				1	1																		1				1							
27	46.13906995	-89.82117848	10	Muck	Pole				3	1								1														3							
28	46.13851195	-89.82118029	8	Muck	Pole				3	1			1														1					1					2		
29	46.15190279	-89.82033402	2	Muck	Pole				1												1							1							1	1	1			
30	46.15078679	-89.82033765	2	Muck	Pole				3				1							1															1		1			
31	46.15022878	-89.82033947	0			NONNAVIGABLE (PLANTS)																																	
32	46.14743876	-89.82034855	3	Sand	Pole				1											1					1														
33	46.14688076	-89.82035036	6	Sand	Pole				3				3	1														1									1		
34	46.14632275	-89.82035218	8	Muck	Pole				1																		1	1								1		
35	46.14576475	-89.82035399	8	Muck	Pole				3	1																		3											
36	46.14520675	-89.82035581	8	Muck	Pole				3																			3											
37	46.14464874	-89.82035762	2	Rock	Pole				1																			1											
38	46.14185872	-89.8203667	14		Rope				1																	1	1					1							
39	46.14130071	-89.82036851	15		Rope				3																	3						1							
40	46.14074271	-89.82037033	15		Rope				3																3														
41	46.1401847	-89.82037214	15		Rope				1																							1							
42	46.1396267	-89.82037396	15		Rope				2																							2							
43	46.13906869	-89.82037577	12	Muck	Pole				3	2							1								1							1							
44	46.15190153	-89.81953113	3	Muck	Pole				3		1		1				1			1																	1		
45	46.15134353	-89.81953295	5	Muck	Pole				1				1																									
46	46.15078552	-89.81953478	3	Sand	Pole				3		1		1							3																	1		
47	46.1479955	-89.81954389	5	Sand	Pole				1																			1				1					1		
48	46.1474375	-89.81954572	9	Sand	Pole				2				1															2											
49	46.14687949	-89.81954754	10	Muck	Pole				3																			3											
50	46.14632149	-89.81954936	12	Muck	Pole				3	1																		1				2							
51	46.14576349	-89.81955119	10	Muck	Pole				3																			3				1							
52	46.14520548	-89.81955301	13	Muck	Pole				0																														
53	46.14464748	-89.81955483	15		Rope				0																														
54	46.14408947	-89.81955666	3	Rock	Pole				0																														
55	46.14353147	-89.81955848	4	Rock	Pole				0																														
56	46.14297346	-89.8195603	8	Sand	Pole				3				1					1									2		1			1							
57	46.14241546	-89.81956212	13	Sand	Pole				0																														
58	46.14185745	-89.81956395	18		Rope				0																														
59	46.14129945	-89.81956577	16		Rope				1																	1													
60	46.14074144	-89.81956759	16		Rope				1																	1													
61	46.14018344	-89.81956942	15		Rope				2	1																1		2			1							
62	46.13962544	-89.81957124	16		Rope				1																	1													
63	46.13906743	-89.81957306	11	Muck	Pole				2	1								1														1							
64	46.15245826	-89.8187264	3	Sand	Pole				1		1	1								1								1									1		
65	46.15190026	-89.81872823	6	Muck	Pole				2	1			1															1											
66	46.15134226	-89.81873006	5	Muck	Pole				3				1															3									1		
67	46.15078425	-89.8187319	5	Muck	Pole				3				3							1								1											
68	46.14799423	-89.81874105	10	Sand	Pole				3	1			1															2				1							
69	46.14743623	-89.81874289	13	Muck	Pole				1																			1									1		
70	46.14687822	-89.81874472	14		Rope				3	1																						3							

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Ceratophyllum demersum	Chara spp.	Eleocharis acicularis	Elodea canadensis	Elodea nuttallii	Equisetum fluviatile	Isoetes sp.	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum tenellum	Najas flexilis	Nymphaea odorata	Potamogeton amplifolius	Potamogeton friesii	Potamogeton gramineus	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria sp. (rosette)	Schoenoplectus acutus	Stuckenia pectinata	Utricularia intermedia	Utricularia vulgaris	Vallisneria americana	Aquatic moss	Freshwater sponge
71	46.14632022	-89.81874655	14		Rope				1																1														
72	46.14576222	-89.81874838	14		Rope				1	1																					1								
73	46.14520421	-89.81875021	16		Rope				1																						1								
74	46.14464621	-89.81875204	16		Rope				1																						1								
75	46.1440882	-89.81875387	18		Rope				0																														
76	46.1435302	-89.81875571	18		Rope				0																														
77	46.14297219	-89.81875754	17		Rope				0																														
78	46.14241419	-89.81875937	18		Rope				0																														
79	46.14185618	-89.8187612	19		Rope				0																														
80	46.14129818	-89.81876303	17		Rope				1																	1													
81	46.14074017	-89.81876486	18		Rope				2																	2													
82	46.14018217	-89.81876669	16		Rope				2																	2													
83	46.13962417	-89.81876852	17		Rope				0																														
84	46.13906616	-89.81877035	12	Muck	Pole				2				1					1														2							
85	46.15245699	-89.8179235	6	Muck	Pole				2				1									1					1	2											
86	46.15189898	-89.81792534	6	Muck	Pole				3				1							1								3									1		
87	46.15134098	-89.81792718	5	Muck	Pole				3																		1	3									1		
88	46.15078298	-89.81792902	5	Muck	Pole				3																			3									1		
89	46.15022497	-89.81793086	0			NONNAVIGABLE (PLANTS)																																	
90	46.14855096	-89.81793638	3	Sand	Pole				1											1																			
91	46.14799296	-89.81793822	10	Muck	Pole				3	1																		3					1						
92	46.14743495	-89.81794006	14		Rope				0																														
93	46.14687695	-89.8179419	14		Rope				1				1																										
94	46.14631894	-89.81794373	14		Rope				0																														
95	46.14576094	-89.81794557	16		Rope				1	1																													
96	46.14520294	-89.81794741	17		Rope				0																														
97	46.14464493	-89.81794925	17		Rope				0																														
98	46.14408693	-89.81795109	17		Pole				0																														
99	46.14352892	-89.81795293	18		Rope				0																														
100	46.14297092	-89.81795477	19		Rope				0																														
101	46.14241291	-89.81795661	20		Rope				0																														
102	46.14185491	-89.81795845	19		Rope				0																														
103	46.1412969	-89.81796029	18		Rope				0																														
104	46.1407389	-89.81796213	18		Rope				0																														
105	46.14018089	-89.81796397	16		Rope				1																	1													
106	46.13962289	-89.81796581	16		Rope				1	1																1													
107	46.13906488	-89.81796764	12	Muck	Pole				2																			2					1						
108	46.13850688	-89.81796948	4	Sand	Pole				1	1										1		1																
109	46.15301371	-89.81711875	6	Muck	Pole				2	1	1		1					1				1		1				1					1				1		
110	46.15245571	-89.81712059	6	Muck	Pole				2				1															1									1		
111	46.1518977	-89.81712244	7	Muck	Pole				3																			3											
112	46.1513397	-89.81712429	6	Muck	Pole				3													1						3											
113	46.15078169	-89.81712614	6	Muck	Pole				3																		1	3					1						
114	46.15022369	-89.81712799	3	Sand	Pole				2											2							1										1		
115	46.14966569	-89.81712983	2	Sand	Pole				1		1				1					1								1											
116	46.14910768	-89.81713168	1	Sand	Pole				1									1										1							1			1	
117	46.14854968	-89.81713353	5	Sand	Pole				1									1		1				1													1		
118	46.14799167	-89.81713538	12	Muck	Pole				2																			1					1						
119	46.14743367	-89.81713723	14		Rope				1																								1						
120	46.14687567	-89.81713907	15		Rope				0																														
121	46.14631766	-89.81714092	13		Rope				0																														
122	46.14575966	-89.81714277	17		Rope				1																								1						
123	46.14520165	-89.81714462	19		Rope				0																														
124	46.14464365	-89.81714646	17		Rope				0																														
125	46.14408565	-89.81714831	18		Rope				0																														
126	46.14352764	-89.81715016	19		Rope				0																														
127	46.14296964	-89.81715201	22		Rope				0																														
128	46.14241163	-89.81715385	21			DEEP																																
129	46.14185363	-89.8171557	21			DEEP																																
130	46.14129562	-89.81715755	17		Rope				0																														
131	46.14073762	-89.81715939	17		Rope				1				1	1														1											
132	46.14017961	-89.81716124	13		Rope				1																	1													
133	46.13962161	-89.81716309	14	Muck	Pole				1																	1						1							
134	46.1390636	-89.81716494	15		Rope				1	1																		1					1						
135	46.1385056	-89.81716678	7	Muck	Pole				2	1			2							1								1					1				2		
136	46.15357042	-89.81631398	5	Sand	Pole				1		1					1			1									1									1		
137	46.15301242	-89.81631583	7	Muck	Pole				3																			3											
138	46.15245442	-89.81631769	8	Muck	Pole				3																		1	3					1						
139	46.15189641	-89.81631955	8	Muck	Pole				3																			3											
140	46.15133841	-89.8163214	8	Muck	Pole				3	1																		3											

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Ceratophyllum demersum	Chara spp.	Eleocharis acicularis	Elodea canadensis	Elodea nuttallii	Equisetum fluviatile	Isoetes sp.	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum tenellum	Najas flexilis	Nymphaea odorata	Potamogeton amplifolius	Potamogeton friesii	Potamogeton gramineus	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria sp. (rosette)	Schoenoplectus acutus	Stuckenia pectinata	Utricularia intermedia	Utricularia vulgaris	Vallisneria americana	Aquatic moss	Freshwater sponge
141	46.15078041	-89.81632326	9	Muck	Pole				3																		3												
142	46.1502224	-89.81632512	5	Sand	Pole				3	2			1													1	1				1							
143	46.1496644	-89.81632697	3	Sand	Pole				3				2							1						1					1							
144	46.1491064	-89.81632883	5	Sand	Pole				2	1										2				1		1					1					1		
145	46.14854839	-89.81633068	6	Sand	Pole				2	1								2													1					1		
146	46.14799039	-89.81633254	13	Rock	Pole				0																													
147	46.14743238	-89.8163344	14		Rope				0																													
148	46.14687438	-89.81633625	15		Rope				0																													
149	46.14631638	-89.81633811	17		Rope				0																													
150	46.14575837	-89.81633996	18		Rope				0																													
151	46.14520037	-89.81634182	18		Rope				0																													
152	46.14464236	-89.81634367	17		Rope				1				1	1												1												
153	46.14408436	-89.81634553	18		Rope				0																													
154	46.14352635	-89.81634738	27			DEEP																																
155	46.14296835	-89.81634924	25			DEEP																																
156	46.14241035	-89.8163511	23			DEEP																																
157	46.14185234	-89.81635295	20		Rope				0																													
158	46.14129434	-89.81635481	15		Rope				0																													
159	46.14073633	-89.81635666	7	Sand	Pole				1											1						1				1	1						
160	46.14017833	-89.81635852	12	Sand	Pole				1				1													1		1										
161	46.13962032	-89.81636037	12	Muck	Pole				1	1			1														1				1							
162	46.13906232	-89.81636223	10	Muck	Pole				3	1			1														3											
163	46.13850431	-89.81636408	11	Muck	Pole				3	1																	1				2							
164	46.15356913	-89.81551106	7	Muck	Pole				3	1																	3											
165	46.15301113	-89.81551292	9	Muck	Pole				3				1														3				1							
166	46.15245312	-89.81551479	10	Muck	Pole				3	1			1												1		1				1							
167	46.15189512	-89.81551665	12	Muck	Pole				3	1			1														2				1							
168	46.15133712	-89.81551852	11	Muck	Pole				3	3																1	1				1							
169	46.15077911	-89.81552038	11		Rope				2	1			1														2											
170	46.15022111	-89.81552224	7	Muck	Pole				3	1			1													1	1				3							
171	46.14966311	-89.81552411	4	Sand	Pole				1											1				1													
172	46.1491051	-89.81552597	6	Sand	Pole				2	1			1														1				1					1		
173	46.1485471	-89.81552784	12	Muck	Pole				3				1														1				2							
174	46.1479891	-89.8155297	16		Rope				0																													
175	46.14743109	-89.81553157	15		Rope				0																													
176	46.14687309	-89.81553343	16		Rope				0																													
177	46.14631508	-89.81553529	18		Rope				0																													
178	46.14575708	-89.81553716	18		Rope				0																													
179	46.14519907	-89.81553902	17		Rope				0																													
180	46.14464107	-89.81554088	18		Rope				0																													
181	46.14408307	-89.81554275	18		Rope				0																													
182	46.14352506	-89.81554461	25			DEEP																																
183	46.14296706	-89.81554648	34			DEEP																																
184	46.14240905	-89.81554834	16		Rope				0																													
185	46.13961903	-89.81555766	8	Muck	Pole				3	2	1		2				1	1																			1		
186	46.13906102	-89.81555952	8	Muck	Pole				3				1														2				2							
187	46.13850302	-89.81556138	8	Muck	Pole				3	1																	3											
188	46.13794502	-89.81556324	5	Muck	Pole				3				1							1			1								1					2		
189	46.15356783	-89.81470814	14	Muck	Pole				1	1			1																									
190	46.15300983	-89.81471001	15	Muck	Pole				2	1			1																		1							
191	46.15245183	-89.81471188	14		Rope				2	1																					2							
192	46.15189382	-89.81471376	15	Muck	Pole				1																		1				1							
193	46.15133582	-89.81471563	13	Muck	Pole				1				1														1				1							
194	46.15077782	-89.8147175	14	Muck	Pole				2																		2											
195	46.15021981	-89.81471937	14		Rope				1	1			1														1				1							
196	46.14966181	-89.81472125	11	Sand	Pole				3	1			1														1				1							
197	46.1491038	-89.81472312	9	Sand	Pole				3				1														1				2					1		
198	46.1485458	-89.81472499	14		Rope				0																													
199	46.1479878	-89.81472686	14		Rope				1																		1											
200	46.14742979	-89.81472874	19		Rope				0																													
201	46.14687179	-89.81473061	16		Rope				0																													
202	46.14631378	-89.81473248	18		Rope				0																													
203	46.14575578	-89.81473435	19		Rope				0																													
204	46.14519778	-89.81473622	20		Rope				0																													
205	46.14463977	-89.81473809	6	Rock	Pole				0																													
206	46.14408177	-89.81473997	36			DEEP																																
207	46.14352376	-89.81474184	42			DEEP																																
208	46.14296576	-89.81474371	12	Sand	Pole				1				1																		1							
209	46.14240775	-89.81474558	3	Rock	Pole				0																													
210	46.13905973	-89.81475681	6	Muck	Pole				3	1																	1	3										

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Ceratophyllum demersum	Chara spp.	Eleocharis acicularis	Elodea canadensis	Elodea nuttallii	Equisetum fluviatile	Isoetes sp.	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum tenellum	Najas flexilis	Nymphaea odorata	Potamogeton amplifolius	Potamogeton friesii	Potamogeton gramineus	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria sp. (rosette)	Schoenoplectus acutus	Stuckenia pectinata	Utricularia intermedia	Utricularia vulgaris	Vallisneria americana	Aquatic moss	Freshwater sponge
211	46.13850172	-89.81475868	6	Muck	Pole				3	1																1	3												
212	46.15356653	-89.81390522	9	Sand	Pole				2	1																	2					1							
213	46.15300853	-89.8139071	16		Rope				1	1			1																			1							
214	46.15245052	-89.81390898	17		Rope				1	1																	1					1							
215	46.15189252	-89.81391086	16		Rope				1				1													1	1					1							
216	46.15133452	-89.81391274	14	Muck	Pole				1	1			1														1					1							
217	46.15077651	-89.81391462	14		Rope				0																														
218	46.15021851	-89.8139165	14		Rope				0																														
219	46.1496605	-89.81391838	16		Rope				0																														
220	46.1491025	-89.81392026	15		Rope				0																														
221	46.1485445	-89.81392214	18		Rope				0																														
222	46.14798649	-89.81392402	19		Rope				0																														
223	46.14742849	-89.81392591	19		Rope				0																														
224	46.14687048	-89.81392779	18		Rope				0																														
225	46.14631248	-89.81392967	21		Rope				0																														
226	46.14575448	-89.81393155	14		Rope				0																														
227	46.14519647	-89.81393343	25			DEEP																																	
228	46.14463847	-89.81393531	27			DEEP																																	
229	46.14408046	-89.81393719	0			DEEP																																	
230	46.14352246	-89.81393907	26			DEEP																																	
231	46.14296446	-89.81394094	10	Muck	Pole				2				2													1						1							
232	46.14240645	-89.81394282	0			TERRESTRIAL																																	
233	46.15356522	-89.8131023	6	Sand	Pole				1		1		1							1		1														1		
234	46.15300722	-89.81310419	14		Rope				1		1																											
235	46.15244921	-89.81310608	17		Rope				1																	1												
236	46.15189121	-89.81310797	17		Rope				2																	2												
237	46.15133321	-89.81310986	14		Rope				2	1			1													1	1					1						
238	46.1507752	-89.81311174	14		Rope				0																														
239	46.1502172	-89.81311363	16		Rope				0																														
240	46.14965919	-89.81311552	16		Rope				0																														
241	46.14910119	-89.81311741	18		Rope				1	1																													
242	46.14854319	-89.8131193	17		Rope				0																														
243	46.14798518	-89.81312119	13	Rock	Pole				0																														
244	46.14742718	-89.81312308	14		Rope				0																														
245	46.14686918	-89.81312496	19		Rope				0																														
246	46.14631117	-89.81312685	25			DEEP																																	
247	46.14575317	-89.81312874	28			DEEP																																	
248	46.14519516	-89.81313063	0			DEEP																																	
249	46.14463716	-89.81313252	0			DEEP																																	
250	46.14407915	-89.8131344	28			DEEP																																	
251	46.14352115	-89.81313629	16		Rope				0																														
252	46.14296315	-89.81313818	11	Rock	Pole				0																														
253	46.14240514	-89.81314007	5	Sand	Pole				0																														
254	46.1535639	-89.81229938	6	Sand	Pole				1	1	1									1								1								1		
255	46.1530059	-89.81230128	12	Rock	Pole				1				1					1														1						
256	46.1524479	-89.81230318	18		Rope				2																	2												
257	46.15188989	-89.81230507	16		Rope				1																	1												
258	46.15133189	-89.81230697	14		Rope				1																	1												
259	46.15077389	-89.81230887	16		Rope				0																														
260	46.15021588	-89.81231076	16		Rope				0																														
261	46.14965788	-89.81231266	18		Rope				0																														
262	46.14909988	-89.81231456	10	Rock	Pole				0																														
263	46.14854187	-89.81231645	14		Rope				0																														
264	46.14798387	-89.81231835	22		Rope				0																														
265	46.14742586	-89.81232025	23		Rope				0																														
266	46.14686786	-89.81232214	22		Rope				0																														
267	46.14630986	-89.81232404	0			DEEP																																	
268	46.14575185	-89.81232593	0			DEEP																																	
269	46.14519385	-89.81232783	0			DEEP																																	
270	46.14463584	-89.81232973	0			DEEP																																	
271	46.14407784	-89.81233162	28			DEEP																																	
272	46.14351984	-89.81233352	14		Rope				0																														
273	46.14296183	-89.81233541	13	Sand	Pole				2				1																	1		1						
274	46.14240383	-89.81233731	1	Rock	Pole				0																														
275	46.15356258	-89.81149646	6	Sand	Pole				1		1													1													1		
276	46.15300458	-89.81149837	12	Rock	Pole				1	1			1																		1							
277	46.15244658	-89.81150027	15		Rope				3																	3						1						
278	46.15188857	-89.81150218	19		Rope				2																	2						1						
279	46.15133057	-89.81150408	15		Rope				1				1													1												
280	46.15077257	-89.81150599	17		Rope				0																														

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Ceratophyllum demersum	Chara spp.	Eleocharis acicularis	Elodea canadensis	Elodea nuttallii	Equisetum fluviatile	Isoetes sp.	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum tenellum	Najas flexilis	Nymphaea odorata	Potamogeton amplifolius	Potamogeton friesii	Potamogeton gramineus	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria sp. (rosette)	Schoenoplectus acutus	Stuckenia pectinata	Utricularia intermedia	Utricularia vulgaris	Vallisneria americana	Aquatic moss	Freshwater sponge
281	46.15021456	-89.81150789	18		Rope				0																														
282	46.14965656	-89.8115098	8	Rock	Pole				0																														
283	46.14909855	-89.8115117	23		Rope				0																														
284	46.14854055	-89.81151361	24		Rope				0																														
285	46.14798255	-89.81151551	23		Rope				0																														
286	46.14742454	-89.81151742	24		Rope				0																														
287	46.14686654	-89.81151932	25			DEEP																																	
288	46.14630854	-89.81152122	0			DEEP																																	
289	46.14575053	-89.81152313	0			DEEP																																	
290	46.14519253	-89.81152503	0			DEEP																																	
291	46.14463452	-89.81152694	0			DEEP																																	
292	46.14407652	-89.81152884	0			DEEP																																	
293	46.14351851	-89.81153075	28			DEEP																																	
294	46.14296051	-89.81153265	20		Rope				0																														
295	46.15356126	-89.81069354	6	Sand	Pole				2		1		1					1		1																	1		
296	46.15300325	-89.81069546	13	Sand	Pole				1																	1												
297	46.15244525	-89.81069737	17		Rope				0																														
298	46.15188725	-89.81069928	18		Rope				1																	1												
299	46.15132924	-89.8107012	17		Rope				1																	1												
300	46.15077124	-89.81070311	17		Rope				0																														
301	46.15021324	-89.81070502	14		Rope				0																														
302	46.14965523	-89.81070693	23		Rope				0																														
303	46.14909723	-89.81070885	23		Rope				0																														
304	46.14853922	-89.81071076	25			DEEP																																	
305	46.14798122	-89.81071267	24		Rope				0																														
306	46.14742322	-89.81071459	25			DEEP																																	
307	46.14686521	-89.8107165	0			DEEP																																	
308	46.14630721	-89.81071841	0			DEEP																																	
309	46.1457492	-89.81072032	0			DEEP																																	
310	46.1451912	-89.81072224	0			DEEP																																	
311	46.1446332	-89.81072415	0			DEEP																																	
312	46.14407519	-89.81072606	0			DEEP																																	
313	46.14351719	-89.81072797	23		Rope				0																														
314	46.14295918	-89.81072988	12	Sand	Pole				0																														
315	46.15411793	-89.8098887	3	Sand	Pole				1											1				1			1						1					
316	46.15355992	-89.80989062	6	Rock	Pole				1		1							1		1				1				1				1						
317	46.15300192	-89.80989255	10	Rock	Pole				1																	1												
318	46.15244392	-89.80989447	14		Rope				0																														
319	46.15188591	-89.80989639	20		Rope				0																														
320	46.15132791	-89.80989831	18		Rope				0																														
321	46.15076991	-89.80990023	18		Rope				0																														
322	46.1502119	-89.80990215	24		Rope				0																														
323	46.1496539	-89.80990407	24		Rope				0																														
324	46.1490959	-89.80990599	25			DEEP																																	
325	46.14853789	-89.80990791	0			DEEP																																	
326	46.14797989	-89.80990984	25			DEEP																																	
327	46.14742188	-89.80991176	0			DEEP																																	
328	46.14686388	-89.80991368	0			DEEP																																	
329	46.14630588	-89.8099156	0			DEEP																																	
330	46.14574787	-89.80991752	0			DEEP																																	
331	46.14518987	-89.80991944	0			DEEP																																	
332	46.14463186	-89.80992136	0			DEEP																																	
333	46.14407386	-89.80992328	0			DEEP																																	
334	46.14351586	-89.8099252	27			DEEP																																	
335	46.14295785	-89.80992712	10	Rock	Pole				0																														
336	46.15411659	-89.80908578	6	Sand	Pole				2								1			1			1	1				1									1		
337	46.15355858	-89.80908771	9	Muck	Pole				1																			1										
338	46.15300058	-89.80908963	11	Muck	Pole				2	1			1					2								1						1						
339	46.15244258	-89.80909156	12	Sand	Pole				0																														
340	46.15188458	-89.80909349	7	Rock	Pole				0																														
341	46.15132657	-89.80909542	14		Rope				0																														
342	46.15076857	-89.80909735	30			DEEP																																	
343	46.15021056	-89.80909928	25			DEEP																																	
344	46.14965256	-89.80910121	24		Rope				0																														
345	46.14909456	-89.80910314	25			DEEP																																	
346	46.14853655	-89.80910507	0			DEEP																																	
347	46.14797855	-89.809107	0			DEEP																																	
348	46.14742055	-89.80910893	0			DEEP																																	
349	46.14686254	-89.80911086	0			DEEP																																	
350	46.14630454	-89.80911278	0			DEEP																																	

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Ceratophyllum demersum	Chara spp.	Eleocharis acicularis	Elodea canadensis	Elodea nuttallii	Equisetum fluviatile	Isoetes sp.	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum tenellum	Najas flexilis	Nymphaea odorata	Potamogeton amplifolius	Potamogeton friesii	Potamogeton gramineus	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria sp. (rosette)	Schoenoplectus acutus	Stuckenia pectinata	Utricularia intermedia	Utricularia vulgaris	Vallisneria americana	Aquatic moss	Freshwater sponge
351	46.14574653	-89.80911471	0			DEEP																																	
352	46.14518853	-89.80911664	0			DEEP																																	
353	46.14463053	-89.80911857	0			DEEP																																	
354	46.14407252	-89.8091205	0			DEEP																																	
355	46.14351452	-89.80912243	27			DEEP																																	
356	46.14295651	-89.80912436	18		Rope				0																														
357	46.15411524	-89.80828285	10	Muck	Pole				2	1																		1				1							
358	46.15355724	-89.80828479	14	Muck	Pole				2	1															1	2													
359	46.15299924	-89.80828672	12	Muck	Pole				2	1																		1				1							
360	46.15244123	-89.80828866	14		Rope				0																														
361	46.15188323	-89.8082906	19		Rope				0																														
362	46.15132523	-89.80829254	27			DEEP																																	
363	46.15076722	-89.80829447	0			DEEP																																	
364	46.15020922	-89.80829641	25			DEEP																																	
365	46.14965122	-89.80829835	25			DEEP																																	
366	46.14909321	-89.80830029	0			DEEP																																	
367	46.14853521	-89.80830222	0			DEEP																																	
368	46.14797721	-89.80830416	0			DEEP																																	
369	46.1474192	-89.8083061	0			DEEP																																	
370	46.1468612	-89.80830803	0			DEEP																																	
371	46.1463032	-89.80830997	0			DEEP																																	
372	46.14574519	-89.80831191	0			DEEP																																	
373	46.14518719	-89.80831384	0			DEEP																																	
374	46.14462918	-89.80831578	0			DEEP																																	
375	46.14407118	-89.80831772	0			DEEP																																	
376	46.14351318	-89.80831965	27			DEEP																																	
377	46.14295517	-89.80832159	19		Rope				0																														
378	46.15411389	-89.80747992	8	Muck	Pole				2	1	1		1					1		1								1											
379	46.15355589	-89.80748187	15		Rope				1																	1						1	1						
380	46.15299789	-89.80748381	21		Rope				0																														
381	46.15243989	-89.80748576	22		Rope				0																														
382	46.15188188	-89.8074877	26			DEEP																																	
383	46.15132388	-89.80748965	26			DEEP																																	
384	46.15076588	-89.8074916	0			DEEP																																	
385	46.15020787	-89.80749354	0			DEEP																																	
386	46.14964987	-89.80749549	0			DEEP																																	
387	46.14909186	-89.80749743	0			DEEP																																	
388	46.14853386	-89.80749938	0			DEEP																																	
389	46.14797586	-89.80750132	0			DEEP																																	
390	46.14741785	-89.80750327	0			DEEP																																	
391	46.14685985	-89.80750521	0			DEEP																																	
392	46.14630185	-89.80750716	0			DEEP																																	
393	46.14574384	-89.8075091	0			DEEP																																	
394	46.14518584	-89.80751105	0			DEEP																																	
395	46.14462783	-89.80751299	0			DEEP																																	
396	46.14406983	-89.80751494	0			DEEP																																	
397	46.14351183	-89.80751688	29			DEEP																																	
398	46.14295382	-89.80751883	10	Rock	Pole				0																														
399	46.15411254	-89.806677	7	Muck	Pole				2									1										2									1		1
400	46.15355454	-89.80667895	12	Muck	Pole				1																			1				1					1		
401	46.15299653	-89.8066809	22		Rope				0																														
402	46.15243853	-89.80668286	24		Rope				0																														
403	46.15188053	-89.80668481	26			DEEP																																	
404	46.15132252	-89.80668676	0			DEEP																																	
405	46.15076452	-89.80668872	0			DEEP																																	
406	46.15020652	-89.80669067	0			DEEP																																	
407	46.14964851	-89.80669262	0			DEEP																																	
408	46.14909051	-89.80669458	0			DEEP																																	
409	46.14853251	-89.80669653	0			DEEP																																	
410	46.1479745	-89.80669848	0			DEEP																																	
411	46.1474165	-89.80670044	0			DEEP																																	
412	46.1468585	-89.80670239	0			DEEP																																	
413	46.14630049	-89.80670434	0			DEEP																																	
414	46.14574249	-89.8067063	0			DEEP																																	
415	46.14518448	-89.80670825	0			DEEP																																	
416	46.14462648	-89.8067102	0			DEEP																																	
417	46.14406848	-89.80671216	0			DEEP																																	
418	46.14351047	-89.80671411	28			DEEP																																	
419	46.15411118	-89.80587407	4	Sand	Pole				1				1							1								1		1							1		
420	46.15355318	-89.80587603	8	Muck	Pole				2	1			1															2				1					1		1

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Ceratophyllum demersum	Chara spp.	Eleocharis acicularis	Elodea canadensis	Elodea nuttallii	Equisetum fluviatile	Isoetes sp.	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum tenellum	Najas flexilis	Nymphaea odorata	Potamogeton amplifolius	Potamogeton friesii	Potamogeton gramineus	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria sp. (rosette)	Schoenoplectus acutus	Stuckenia pectinata	Utricularia intermedia	Utricularia vulgaris	Vallisneria americana	Aquatic moss	Freshwater sponge
421	46.15299517	-89.80587799	18		Rope				1		1																												
422	46.15243717	-89.80587995	22		Rope				0																														
423	46.15187917	-89.80588192	27			DEEP																																	
424	46.15132116	-89.80588388	0			DEEP																																	
425	46.15076316	-89.80588584	0			DEEP																																	
426	46.15020516	-89.8058878	0			DEEP																																	
427	46.14964715	-89.80588976	0			DEEP																																	
428	46.14908915	-89.80589172	0			DEEP																																	
429	46.14853115	-89.80589369	0			DEEP																																	
430	46.14797314	-89.80589565	0			DEEP																																	
431	46.14741514	-89.80589761	0			DEEP																																	
432	46.14685714	-89.80589957	0			DEEP																																	
433	46.14629913	-89.80590153	0			DEEP																																	
434	46.14574113	-89.80590349	0			DEEP																																	
435	46.14518312	-89.80590545	0			DEEP																																	
436	46.14462512	-89.80590741	0			DEEP																																	
437	46.14406712	-89.80590937	0			DEEP																																	
438	46.14350911	-89.80591134	29			DEEP																																	
439	46.15355181	-89.80507311	6	Muck	Pole				2	1			1				1			1			1					1					1					1		
440	46.15299381	-89.80507508	10	Muck	Pole				2				1														1	1									1		
441	46.1524358	-89.80507705	23		Rope				0																														
442	46.1518778	-89.80507902	25			DEEP																																	
443	46.1513198	-89.80508099	0			DEEP																																	
444	46.15076179	-89.80508296	0			DEEP																																	
445	46.15020379	-89.80508493	0			DEEP																																	
446	46.14964579	-89.8050869	0			DEEP																																	
447	46.14908778	-89.80508887	0			DEEP																																	
448	46.14852978	-89.80509084	0			DEEP																																	
449	46.14797178	-89.80509281	0			DEEP																																	
450	46.14741377	-89.80509478	0			DEEP																																	
451	46.14685577	-89.80509675	0			DEEP																																	
452	46.14629777	-89.80509872	0			DEEP																																	
453	46.14573976	-89.80510069	0			DEEP																																	
454	46.14518176	-89.80510266	0			DEEP																																	
455	46.14462375	-89.80510462	0			DEEP																																	
456	46.14406575	-89.80510659	0			DEEP																																	
457	46.14350775	-89.80510856	27			DEEP																																	
458	46.14294974	-89.80511053	2	Sand	Pole				1																								1							
459	46.15299243	-89.80427217	8	Muck	Pole				2																			1									1		1
460	46.15243443	-89.80427415	10	Muck	Pole				2				1														1	2									1		
461	46.15187643	-89.80427613	21		Rope				1		1																												
462	46.15131843	-89.80427811	27			DEEP																																	
463	46.15076042	-89.80428008	0			DEEP																																	
464	46.15020242	-89.80428206	0			DEEP																																	
465	46.14964442	-89.80428404	0			DEEP																																	
466	46.14908641	-89.80428602	0			DEEP																																	
467	46.14852841	-89.80428799	0			DEEP																																	
468	46.1479704	-89.80428997	0			DEEP																																	
469	46.1474124	-89.80429195	0			DEEP																																	
470	46.1468544	-89.80429393	0			DEEP																																	
471	46.14629639	-89.8042959	0			DEEP																																	
472	46.14573839	-89.80429788	0			DEEP																																	
473	46.14518039	-89.80429986	0			DEEP																																	
474	46.14462238	-89.80430184	0			DEEP																																	
475	46.14406438	-89.80430381	30			DEEP																																	
476	46.14350637	-89.80430579	8	Rock	Pole				0																														
477	46.15243305	-89.80347125	8	Muck	Pole				1																			1									1		
478	46.15187505	-89.80347323	10	Muck	Pole				2				1															2					1				1		
479	46.15131705	-89.80347522	26			DEEP																																	
480	46.15075904	-89.80347721	0			DEEP																																	
481	46.15020104	-89.80347919	0			DEEP																																	
482	46.14964304	-89.80348118	0			DEEP																																	
483	46.14908503	-89.80348316	0			DEEP																																	
484	46.14852703	-89.80348515	0			DEEP																																	
485	46.14796903	-89.80348713	0			DEEP																																	
486	46.14741102	-89.80348912	0			DEEP																																	
487	46.14685302	-89.80349111	0			DEEP																																	
488	46.14629502	-89.80349309	0			DEEP																																	
489	46.14573701	-89.80349508	0			DEEP																																	
490	46.14517901	-89.80349706	0			DEEP																																	

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Ceratophyllum demersum	Chara spp.	Eleocharis acicularis	Elodea canadensis	Elodea nuttallii	Equisetum fluviatile	Isoetes sp.	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum tenellum	Najas flexilis	Nymphaea odorata	Potamogeton amplifolius	Potamogeton friesii	Potamogeton gramineus	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria sp. (rosette)	Schoenoplectus acutus	Stuckenia pectinata	Utricularia intermedia	Utricularia vulgaris	Vallisneria americana	Aquatic moss	Freshwater sponge
491	46.14462101	-89.80349905	0			DEEP																																	
492	46.144063	-89.80350103	32			DEEP																																	
493	46.143505	-89.80350302	22		Rope				0																														
494	46.15187367	-89.80267034	7	Sand	Pole				2	2	1									1							1									1			
495	46.15131566	-89.80267233	23		Rope				1																1						1								
496	46.15075766	-89.80267433	0			DEEP																																	
497	46.15019966	-89.80267632	0			DEEP																																	
498	46.14964165	-89.80267832	0			DEEP																																	
499	46.14908365	-89.80268031	0			DEEP																																	
500	46.14852565	-89.8026823	0			DEEP																																	
501	46.14796764	-89.8026843	0			DEEP																																	
502	46.14740964	-89.80268629	0			DEEP																																	
503	46.14685164	-89.80268828	0			DEEP																																	
504	46.14629363	-89.80269028	0			DEEP																																	
505	46.14573563	-89.80269227	0			DEEP																																	
506	46.14517763	-89.80269427	0			DEEP																																	
507	46.14461962	-89.80269626	0			DEEP																																	
508	46.14406162	-89.80269825	32			DEEP																																	
509	46.14350361	-89.80270025	5	Rock	Pole				0																														
510	46.15131428	-89.80186945	7	Sand	Pole				2								1										1									1			
511	46.15075627	-89.80187145	28			DEEP																																	
512	46.15019827	-89.80187345	0			DEEP																																	
513	46.14964027	-89.80187545	0			DEEP																																	
514	46.14908226	-89.80187746	31			DEEP																																	
515	46.14852426	-89.80187946	0			DEEP																																	
516	46.14796626	-89.80188146	0			DEEP																																	
517	46.14740825	-89.80188346	0			DEEP																																	
518	46.14685025	-89.80188546	0			DEEP																																	
519	46.14629225	-89.80188747	33			DEEP																																	
520	46.14573424	-89.80188947	30			DEEP																																	
521	46.14517624	-89.80189147	30			DEEP																																	
522	46.14461823	-89.80189347	32			DEEP																																	
523	46.14406023	-89.80189547	29			DEEP																																	
524	46.15075488	-89.80106857	6	Sand	Pole				2	1							1	1		1		1					1	1								1			
525	46.15019688	-89.80107058	29			DEEP																																	
526	46.14963887	-89.80107259	32			DEEP																																	
527	46.14908087	-89.8010746	0			DEEP																																	
528	46.14852287	-89.80107661	34			DEEP																																	
529	46.14796486	-89.80107862	30			DEEP																																	
530	46.14740686	-89.80108063	31			DEEP																																	
531	46.14684885	-89.80108264	28			DEEP																																	
532	46.14629085	-89.80108465	18		Rope				1		1		1													1													
533	46.14573285	-89.80108666	12	Sand	Pole				3	1			1					1								3													
534	46.14517484	-89.80108867	11	Muck	Pole				2				1					1		1						1													
535	46.14461684	-89.80109068	6	Sand	Pole				2				1							2								1	1		1								
536	46.15019548	-89.80026771	3	Sand	Pole				2				1							2			1	1						1							1		
537	46.14963747	-89.80026973	23		Rope				1																							1						
538	46.14907947	-89.80027175	28			DEEP																																	
539	46.14852147	-89.80027377	17		Rope				1																	1													
540	46.14796346	-89.80027579	6	Sand	Pole				2	1			1							2									1									
541	46.14740546	-89.8002778	5	Sand	Pole				1																					1								
542	46.14684745	-89.80027982	5	Sand	Pole				2											1				1													1		
543	46.14628945	-89.80028184	4	Sand	Pole				2											2				1													1		

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Brasenia schreberi	Ceratophyllum demersum	Chara spp.	Dulichium arundinaceum	Eleocharis canadensis	Heteranthera dubia	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton epihydrus	Potamogeton foliosus	Potamogeton friesii	Potamogeton gramineus	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria sp. (rosette)	Sagittaria rigida	Trypha spp.	Utricularia intermedia	Utricularia vulgaris	Vallisneria americana	Zizania sp.	Aquatic moss	Potamogeton berchtoldii
1	46.13037990000	-89.83357613000	4	Muck	Pole				1			1								1					1												1					
2	46.13004690000	-89.83357713000	3	Muck	Pole				2			1						1																1				1					
3	46.12971389000	-89.83357814000	3	Muck	Pole				2			1						1		1					1												1					
4	46.13037920000	-89.83309717000	2	Muck	Pole				2			1						1																			1					
5	46.13004620000	-89.83309818000	3	Muck	Pole				3	1								1	1	1									2								1	1				
6	46.12971320000	-89.83309918000	3	Muck	Pole				1			1							1	1					1												1				1	
7	46.13037850000	-89.83261821000	2	Muck	Pole				1									1																1					1			
8	46.13004550000	-89.83261922000	3	Muck	Pole				1											1																	1				
9	46.12971250000	-89.83262023000	3	Muck	Pole				1	1		1						1							1				1								1		1			
10	46.13004480000	-89.83214026000	4	Muck	Pole				2									1	1	1	1															1	1				
11	46.12971179000	-89.83214127000	3	Muck	Pole				1	1								1		1					1												1	1				
12	46.13071010000	-89.83165927000	2	Muck	Pole				1		1	1						1				1					1	1									1					
13	46.13037710000	-89.83166029000	3	Muck	Pole				1											1																	1				1	
14	46.13004409000	-89.83166130000	0			NONNAVIGABLE (PLANTS)																																					
15	46.13104240000	-89.83117929000	4	Muck	Pole				2	1	1			1				1		1									1								1	1				
16	46.13070939000	-89.83118031000	3	Muck	Pole				1											1																				1		
17	46.13037639000	-89.83118133000	1	Muck	Pole				1																										1			1		1		
18	46.13104169000	-89.83070033000	4	Muck	Pole				1	1		1		1				1		1									1					1				1	1			
19	46.13070869000	-89.83070135000	1	Muck	Pole				1				1																						1	1						
20	46.13104098000	-89.83022136000	4	Muck	Pole				1									1		1									1									1	1			
21	46.13070798000	-89.83022238000	3	Muck	Pole				3									2								1								1					1			
22	46.13104027000	-89.82974239000	5	Muck	Pole				3			1					1	2																					1			
23	46.13070726000	-89.82974342000	3	Muck	Pole				3			3						1							1										1							
24	46.13037426000	-89.82974444000	4	Muck	Pole				2							1		1																				1	1			
25	46.13137256000	-89.82926240000	4	Muck	Pole				3			1						3											1												
26	46.13103955000	-89.82926343000	4	Muck	Pole				2			1						2		1																1						
27	46.13070655000	-89.82926445000	4	Muck	Pole				1			1						1		1								0													
28	46.13037354000	-89.82926548000	3	Muck	Pole				1			1																							1				1	1			
29	46.13237085000	-89.82878033000	4	Muck	Pole				2									2		1															1					1			
30	46.13203785000	-89.82878136000	4	Muck	Pole				1									1																					1			
31	46.13170484000	-89.82878240000	4	Muck	Pole				1									1										1						1								
32	46.13137184000	-89.82878343000	4	Muck	Pole				2									1											1										1			
33	46.13103884000	-89.82878446000	3	Sand	Pole				3									3										1										1			
34	46.13336914000	-89.82829825000	4	Muck	Pole				2									2		1																		1			
35	46.13303614000	-89.82829928000	5	Muck	Pole				3																			1	1									2			
36	46.13270313000	-89.82830032000	5	Muck	Pole				1		1	1						1			1																	1			
37	46.13237013000	-89.82830135000	5	Muck	Pole				1			1									1																	1			
38	46.13203713000	-89.82830239000	5	Muck	Pole				1		1																		1												
39	46.13170412000	-89.82830342000	5	Sand	Pole				1								1	1											1					1				1	1			
40	46.13137112000	-89.82830446000	5	Sand	Pole				1									1										1	1												
41	46.13103812000	-89.82830549000	3	Sand	Pole				3									3							1								1								
42	46.13070511000	-89.82830653000	4	Muck	Pole				0																																
43	46.13037211000	-89.82830756000	4	Sand	Pole				1									1							1																
44	46.13370142000	-89.82781822000	6	Muck	Pole				1																														1			
45	46.13336842000	-89.82781926000	7	Muck	Pole				0																																
46	46.13303542000	-89.82782030000	7	Muck	Pole				1																				1												
47	46.13270241000	-89.82782134000	7	Muck	Pole				1		1															1			1					1								
48	46.13236941000	-89.82782238000	6	Muck	Pole				2		2			1			1																								
49	46.13170340000	-89.82782445000	4	Muck	Pole				3			1						1									1	1						1								
50	46.13137040000	-89.82782549000	4	Muck	Pole				1																									1								
51	46.13103740000	-89.82782653000	4	Sand	Pole				2												1																	1			
52	46.13070439000	-89.82782756000	5	Sand	Pole				2									1			1								1									1			
53	46.13037139000	-89.82782860000	6	Muck	Pole				1																				1												
54	46.13436671000	-89.82733715000	4	Muck	Pole				2					2				1																1					1			
55	46.13403371000	-89.82733819000	7	Muck	Pole				2		1																		2												
56	46.13370070000	-89.82733924000	7	Muck	Pole				1		1																		1												
57	46.13336770000	-89.82734028000	7	Muck	Pole				2		1			1															2					1								
58	46.13303470000	-89.82734132000	7	Muck	Pole				2					1															2					1								
59	46.13270169000	-89.82734236000	7	Muck	Pole				1		1																		1												
60	46.13236869000	-89.82734340000	7	Muck	Pole				2																				2												
61	46.13203569000	-89.82734444000	5	Muck	Pole				3		3			1													1		1												
62	46.13136968000	-89.82734652000	2	Sand	Pole				1			1		1				1									1															
63	46.13103667000	-89.82734756000	5	Muck	Pole				3					1															1					1					1			
64	46.13070367000	-89.82734860000	4	Muck	Pole				2									1											1					1					1			
65	46.13436598000	-89.82685816000	6	Muck	Pole				2		1			1															1					1								
66	46.13403298000	-89.82685920000	8	Muck	Pole				2																				2					1								
67	46.13369998000	-89.82686025000	7	Muck	Pole				0																																
68	46.13336697000	-89.82686129000	7	Muck	Pole				1					1																											
69	46.13303397000	-89.82686233000	7	Muck	Pole				2					1															2												
70	46.13270097000	-89.82686338000	7	Muck	Pole				2																				1												
71	46.13236796000	-89.82686442000	6	Muck	Pole				2																				2					1								
72	46.13203496000	-89.82686546000	4	Sand	Pole				2			1		1				2						1										1								
73	46.13170196000	-89.82686651000	6	Muck	Pole				3					2															1					1								

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Brasenia schreberi	Ceratophyllum demersum	Chara spp.	Dulichium arundinaceum	Eleocharis palustris	Heteranthera dubia	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton epihydrus	Potamogeton foliosus	Potamogeton friesii	Potamogeton gramineus	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria sp. (rosette)	Sagittaria rigida	Typha spp.	Utricularia intermedia	Utricularia vulgaris	Vallisneria americana	Zizania sp.	Aquatic moss	Potamogeton berchtoldii
74	46.13136895000	-89.82686755000	5	Muck	Pole				2					1															1				1						1			
75	46.13103595000	-89.82686859000	4	Muck	Pole				1		1							1		1													1									
76	46.13702928000	-89.82637079000	2	Sand	Pole				1		1			1												1			1							1					
77	46.13669628000	-89.82637184000	2	Sand	Pole				1					1															1												
78	46.13636328000	-89.82637288000	2	Sand	Pole				2					1				1																1							
79	46.13469826000	-89.82637812000	6	Muck	Pole				2																			1	2				1								
80	46.13436526000	-89.82637916000	9	Muck	Pole				2		1			1												1			2				1								
81	46.13403225000	-89.82638021000	9	Muck	Pole				2		1															2			1												
82	46.13369925000	-89.82638126000	8	Muck	Pole				2					1															2												
83	46.13336625000	-89.82638230000	7	Muck	Pole				2																				2				1								
84	46.13136823000	-89.82638858000	4	Sand	Pole				3		1							3																					1			
85	46.13802757000	-89.82588862000	0			NONNAVIGABLE (PLANTS)																																				
86	46.13769456000	-89.82588967000	0			NONNAVIGABLE (PLANTS)																																				
87	46.13736156000	-89.82589072000	4	Muck	Pole				2					1				1	1	1							2		1					1							
88	46.13702856000	-89.82589177000	6	Muck	Pole				3		1			1							1					1			1					1					2		
89	46.13669555000	-89.82589282000	6	Muck	Pole				1					1							1								1					1					1		
90	46.13636255000	-89.82589387000	6	Muck	Pole				2												1								2				1					1		
91	46.13602955000	-89.82589492000	4	Muck	Pole				2									1										1	1				1					1		
92	46.13569654000	-89.82589597000	5	Muck	Pole				2					1			1	1						1									1					2		
93	46.13536354000	-89.82589702000	7	Muck	Pole				2		1																		2				1							
94	46.13503054000	-89.82589807000	10	Muck	Pole				2					1															2				1							
95	46.13469753000	-89.82589912000	11	Muck	Pole				2																				2				1							
96	46.13436453000	-89.82590017000	11	Muck	Pole				2		1			1												1			2												
97	46.13403153000	-89.82590122000	11	Muck	Pole				3		1															1			2				1								
98	46.13369852000	-89.82590227000	11	Muck	Pole				3		1															2															
99	46.13336552000	-89.82590332000	7	Muck	Pole				3																				3				1					1		
100	46.13303252000	-89.82590437000	4	Sand	Pole				2					2				1															1					1		
101	46.13835984000	-89.82540854000	0			NONNAVIGABLE (PLANTS)																																				
102	46.13802683000	-89.82540960000	0			NONNAVIGABLE (PLANTS)																																				
103	46.13769383000	-89.82541065000	0			NONNAVIGABLE (PLANTS)																																				
104	46.13736083000	-89.82541170000	5	Muck	Pole				1					1	1				1					1					1					1					1		
105	46.13702783000	-89.82541275000	7	Muck	Pole				2																	2			1				1							
106	46.13669482000	-89.82541381000	8	Muck	Pole				3																	3			1											
107	46.13636182000	-89.82541486000	9	Muck	Pole				2																				2				1							
108	46.13602882000	-89.82541591000	8	Muck	Pole				2					1															2				1							
109	46.13569581000	-89.82541696000	10	Muck	Pole				2					1															1											
110	46.13536281000	-89.82541802000	10	Muck	Pole				2																				2											
111	46.13502981000	-89.82541907000	11	Muck	Pole				3								1									1			3				1							
112	46.13469680000	-89.82542012000	12	Muck	Pole				2		1																		2				1							
113	46.13436380000	-89.82542117000	12	Muck	Pole				2					1												1		1	1												
114	46.13403080000	-89.82542223000	12	Muck	Pole				3		1																		2				2							
115	46.13369779000	-89.82542328000	10	Muck	Pole				2																	2			1											
116	46.13336479000	-89.82542433000	7	Muck	Pole				3		1			1															3				1							
117	46.13303179000	-89.82542538000	5	Muck	Pole				2		1			1														1	1				1							
118	46.13736010000	-89.82493268000	7	Muck	Pole				2																				2				1					1		
119	46.13702709000	-89.82493374000	9	Muck	Pole				2		1															1			2				1							
120	46.13669409000	-89.82493479000	10	Muck	Pole				2																	1			1											
121	46.13636109000	-89.82493585000	12	Muck	Pole				2		1																		2									1		
122	46.13602808000	-89.82493690000	11	Muck	Pole				3		1																		3											
123	46.13569508000	-89.82493796000	14		Rope				3		1															1			2				1							
124	46.13536208000	-89.82493901000	13		Rope				3		1																		1				3							
125	46.13502907000	-89.82494007000	13	Muck	Pole				3																	3			1				1							
126	46.13469607000	-89.82494112000	13	Muck	Pole				3		1																		3				1							
127	46.13436307000	-89.82494218000	13	Muck	Pole				3		3															1			1				1							
128	46.13403006000	-89.82494323000	10	Muck	Pole				3		1																		1				3							
129	46.13369706000	-89.82494429000	8	Muck	Pole				2												1								2											
130	46.13336406000	-89.82494534000	7	Muck	Pole				2		1																		1				1							
131	46.13735936000	-89.82445366000	7	Muck	Pole				2																			1	2				1							
132	46.13702636000	-89.82445472000	11	Muck	Pole				2		1															1			2				1							
133	46.13669335000	-89.82445578000	12	Muck	Pole				2																	1			1											
134	46.13636035000	-89.82445683000	13	Muck	Pole				2		1															1							1							
135	46.13602735000	-89.82445789000	13	Muck	Pole				2		1																		1				1							
136	46.13569435000	-89.82445895000	15	Muck	Pole				2		2																						1							
137	46.13536134000	-89.82446001000	16		Rope				2		1																		1				2							
138	46.13502834000	-89.82446107000	14	Muck	Pole				1																				1											1
139	46.13469534000	-89.82446212000	13	Muck	Pole				3		1															1			1				3							
140	46.13436233000	-89.82446318000	11	Muck	Pole				2		2																		1				1							
141	46.13402933000	-89.82446424000	9	Muck	Pole				3																				1				3							
142	46.13369633000	-89.82446530000	6	Muck	Pole				2																			1	2				1					1		
143	46.13769163000	-89.82397358000	4	Sand	Pole				2									1						1			2			1							1			
144	46.13735862000	-89.82397464000	8	Muck	Pole				2					1							1							1	2											
145	46.13702562000	-89.82397570000	13	Muck	Pole				2																	2			1											
146	46.13669262000	-89.82397676000	13	Muck	Pole				2																	2			1											

Point Number	LATITUDE	LONGITUDE	DEPTH	SEDIMENT	POLE_ROPE	COMMENTS	NOTES	NUISANCE	Total Rake Fullness	Brasenia schreberi	Ceratophyllum demersum	Chara spp.	Dulichium arundinaceum	Eleocharis canadensis	Heteranthera dubia	Megalodonta beckii	Myriophyllum sibiricum	Najas flexilis	Nuphar variegata	Nymphaea odorata	Potamogeton amplifolius	Potamogeton epihydrus	Potamogeton foliosus	Potamogeton friesii	Potamogeton gramineus	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton robbinsii	Potamogeton spirillus	Potamogeton strictifolius	Potamogeton vaseyi	Potamogeton zosteriformis	Sagittaria sp. (rosette)	Sagittaria rigida	Trypha spp.	Utricularia intermedia	Utricularia vulgaris	Vallisneria americana	Zizania sp.	Aquatic moss	Potamogeton berchtoldii
147	46.13635961000	-89.82397782000	14		Rope				2																	2							1									
148	46.13602661000	-89.82397888000	15		Rope				1																	1																
149	46.13569361000	-89.82397994000	16		Rope				2		1																						2									1
150	46.13536061000	-89.82398100000	15		Rope				1					1																											1
151	46.13502760000	-89.82398207000	12	Muck	Pole				3		1															2			1												
152	46.13469460000	-89.82398313000	10	Muck	Pole				2																				2												
153	46.13436160000	-89.82398419000	9	Muck	Pole				2																				2												
154	46.13835690000	-89.82349243000	3	Sand	Pole				0																																
155	46.13769089000	-89.82349455000	4	Sand	Pole				2					1			1	1								1			1				1						1			
156	46.13735789000	-89.82349562000	6	Muck	Pole				2		1										1					1		1	2				1						1			
157	46.13702488000	-89.82349668000	13	Muck	Pole				2																	2															
158	46.13669188000	-89.82349775000	14		Rope				3		2															2							1								
159	46.13635888000	-89.82349881000	15		Rope				1																	1															
160	46.13602587000	-89.82349987000	15		Rope				1		1															1							1								
161	46.13569287000	-89.82350094000	16						1																				1				1								
162	46.13535987000	-89.82350200000	13	Muck	Pole				2					1															2				1								
163	46.13502686000	-89.82350306000	10	Muck	Pole				2		1															1			2				1								
164	46.13469386000	-89.82350413000	8	Muck	Pole				2																				2										1		
165	46.13769015000	-89.82301553000	4	Sand	Pole				2		1			1				1								1			1				1						1			
166	46.13735715000	-89.82301660000	7	Muck	Pole				2		1										1							1	2												
167	46.13702414000	-89.82301766000	13	Muck	Pole				2																	2															
168	46.13669114000	-89.82301873000	15		Rope				2		2															1							1								
169	46.13635814000	-89.82301980000	17		Rope				0																																
170	46.13602513000	-89.82302086000	17		Rope				1																	1															1
171	46.13569213000	-89.82302193000	16		Rope				1																								1								
172	46.13535913000	-89.82302300000	12	Muck	Pole				2																				2				1								
173	46.13502612000	-89.82302406000	5	Sand	Pole				2		1			1			1	1											1		1							1			
174	46.13768941000	-89.82253651000	5	Sand	Pole				3		3			1														1	1				1						1			
175	46.13735640000	-89.82253757000	10	Muck	Pole				2																				2												
176	46.13702340000	-89.82253864000	13	Muck	Pole				2		1															2															
177	46.13669040000	-89.82253971000	14		Rope				1																	1															
178	46.13635739000	-89.82254078000	17		Rope				2		1															2	1						1								
179	46.13602439000	-89.82254185000	17		Rope				2		1															1															1
180	46.13569139000	-89.82254292000	13	Muck	Pole				2		1															1			1				1								
181	46.13535838000	-89.82254399000	11	Muck	Pole				2		1			1															2				1								
182	46.13735566000	-89.82205855000	8	Muck	Pole				2												1								1				2								
183	46.13702265000	-89.82205963000	12	Muck	Pole				3		1			1												1			2												
184	46.13668965000	-89.82206070000	14		Rope				2																	2							1								
185	46.13635665000	-89.82206177000	14		Rope				2		2															1	1														
186	46.13602365000	-89.82206284000	17		Rope				2		1			2																											1
187	46.13569064000	-89.82206392000	13	Sand	Pole				2		1			1														1	2				1								
188	46.13735491000	-89.82157953000	8	Muck	Pole				2		1																		2				1								
189	46.13702191000	-89.82158061000	12	Muck	Pole				3		1															3			1				1								
190	46.13668890000	-89.82158168000	14	Muck	Pole				2		1																						2								
191	46.13635590000	-89.82158276000	14	Muck	Pole				3		3															1			1				1								
192	46.13602290000	-89.82158383000	12	Muck	Pole				2		1																		1				1								
193	46.13568990000	-89.82158491000	0			TERRESTRIAL																																				
194	46.13735416000	-89.82110051000	7	Muck	Pole				2																				2												
195	46.13702116000	-89.82110159000	10	Muck	Pole				3																				3				1								
196	46.13668816000	-89.82110267000	13	Muck	Pole				2		1															1															
197	46.13635515000	-89.82110375000	14	Muck	Pole				1		1															1			1												
198	46.13602215000	-89.82110483000	13	Muck	Pole				2		1															2															
199	46.13568915000	-89.82110590000	5	Sand	Pole				2		1			1																	1		1								
200	46.13702041000	-89.82062257000	8	Muck	Pole				3																				3				1								
201	46.13668741000	-89.82062365000	10	Muck	Pole				3																	1			3												
202	46.13635440000	-89.82062473000	11	Muck	Pole				3		1			1															3				1								
203	46.13602140000	-89.82062582000	12	Muck	Pole				2		1															2															1
204	46.13568840000	-89.82062690000	4	Sand	Pole				2		2			1																									1			
205	46.13668665000	-89.82014464000	8	Muck	Pole				2					1															2												
206	46.13635365000	-89.82014572000	8	Muck	Pole				3		2			1												1			1				1								
207	46.13602065000	-89.82014681000	8	Muck	Pole				2		2																	1	1				1						1			

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APPENDIX F

Manitowish Chain Native American Spear Harvest Data

Manitowish Chain - Individual Lake Walleye Spear Harvest Data

	Alder			Benson			Clear			Fawn		
Year	Safe Harvest	Declaration	Total Harvest	Safe Harvest	Declaration	Total Harvest	Safe Harvest	Declaration	Total Harvest	Safe Harvest	Declaration	Total Harvest
1989	134	82	27	-	-	-	256	155	120	-	-	-
1990	141	76	0	-	-	-	268	144	144	-	-	-
1991	124	68	51	-	-	-	239	131	129	-	-	-
1992	119	65	61	-	-	-	228	125	71	-	-	-
1993	120	65	0	-	-	-	230	125	118	-	-	-
1994	129	77	0	-	-	-	243	145	142	-	-	-
1995	110	82	0	-	-	-	209	156	156	-	-	-
1996	114	96	96	-	-	-	223	133	132	-	-	-
1997	114	62	57	-	-	-	223	122	120	-	-	-
1998	114	62	62	-	-	-	222	122	117	-	-	-
1999	112	61	61	-	-	-	219	120	117	-	-	-
2000	326	130	130	-	-	-	198	79	79	-	-	-
2001	280	111	81	-	-	-	170	67	67	-	-	-
2002	117	64	0	-	-	-	228	125	125	-	-	-
2003	117	64	128	-	-	-	228	125	119	-	-	-
2004	117	64	64	-	-	-	229	125	125	34	18	0
2005	204	81	0	-	-	-	193	77	66	13	5	0
2006	175	69	46	-	-	-	165	65	66	-	-	-
2007	112	61	17	-	-	-	220	120	119	-	-	-
2008	112	61	61	-	-	-	219	120	120	-	-	-
2009	109	59	0	-	-	-	214	117	129	-	-	-
2010	110	60	4	12	6	0	217	119	119	31	17	0
2011	112	61	0	12	6	0	221	121	121	32	17	0
2012	109	59	59	12	6	0	214	117	117	31	17	0
2013	102	86	0	11	9	0	200	169	169	29	24	0

	Island			Little Star			Manitowish			Rest		
Year	Safe Harvest	Declaration	Total Harvest	Safe Harvest	Declaration	Total Harvest	Safe Harvest	Declaration	Total Harvest	Safe Harvest	Declaration	Total Harvest
1989	447	269	268	120	74	0	235	143	48	239	177	97
1990	466	251	252	127	68	0	247	133	0	291	164	109
1991	421	231	202	111	61	40	219	120	16	305	150	146
1992	399	219	193	107	58	0	209	114	75	273	142	129
1993	404	220	183	0	0	0	211	115	1	260	143	54
1994	440	263	262	0	0	0	0	0	0	263	179	108
1995	377	282	266	0	0	0	0	0	0	300	192	192
1996	397	238	233	102	86	0	204	173	169	257	145	145
1997	396	217	217	102	56	16	204	112	57	243	133	131
1998	396	217	217	102	56	0	204	112	111	242	133	133
1999	391	215	213	100	54	0	201	110	110	239	131	131
2000	819	327	327	61	24	24	126	50	50	229	91	86
2001	702	280	279	52	20	0	108	43	0	196	78	63
2002	407	223	218	104	57	57	209	114	114	249	136	136
2003	405	222	221	105	57	114	209	114	112	248	136	136
2004	409	224	222	105	57	56	210	115	115	250	137	133
2005	429	171	125	28	11	0	59	23	0	244	97	83
2006	368	147	130	24	9	0	50	19	5	209	83	83
2007	395	217	217	100	54	54	202	111	107	240	131	131
2008	392	215	192	100	54	54	201	110	86	239	131	113
2009	384	211	211	97	53	0	196	107	54	234	128	128
2010	391	215	211	99	54	54	199	109	109	237	130	131
2011	396	217	217	101	55	55	202	111	111	241	132	131
2012	383	325	325	98	53	42	196	107	107	234	128	128
2013	359	215	215	91	77	77	183	155	118	218	185	185

Manitowish Chain - Individual Lake Walleye Spear Harvest Data

	Spider			Stone			Sturgeon			Vance		
Year	Safe Harvest	Declaration	Total Harvest	Safe Harvest	Declaration	Total Harvest	Safe Harvest	Declaration	Total Harvest	Safe Harvest	Declaration	Total Harvest
1989	133	82	0	-	-	-	-	-	-	-	-	-
1990	140	75	0	-	-	-	-	-	-	-	-	-
1991	123	67	0	-	-	-	-	-	-	-	-	-
1992	118	64	62	-	-	-	-	-	-	-	-	-
1993	119	64	21	-	-	-	-	-	-	-	-	-
1994	0	0	0	-	-	-	-	-	-	-	-	-
1995	0	0	0	-	-	-	-	-	-	-	-	-
1996	113	96	44	-	-	-	-	-	-	-	-	-
1997	113	62	33	-	-	-	-	-	-	-	-	-
1998	113	62	59	-	-	-	-	-	-	-	-	-
1999	111	61	44	-	-	-	-	-	-	-	-	-
2000	58	23	23	-	-	-	-	-	-	-	-	-
2001	50	19	19	-	-	-	-	-	-	-	-	-
2002	116	63	0	-	-	-	-	-	-	-	-	-
2003	116	63	62	-	-	-	-	-	-	-	-	-
2004	116	63	45	-	-	-	-	-	-	-	-	-
2005	49	19	0	-	-	-	-	-	-	-	-	-
2006	42	16	0	-	-	-	-	-	-	-	-	-
2007	111	61	32	-	-	-	-	-	-	-	-	-
2008	111	61	41	-	-	-	-	-	-	-	-	-
2009	108	59	0	-	-	-	-	-	-	-	-	-
2010	109	59	59	57	31	0	14	7	0	13	7	0
2011	112	61	59	59	32	0	14	7	0	13	7	0
2012	108	59	40	57	31	0	14	7	0	13	7	0
2013	101	85	0	53	45	0	13	11	0	13	10	0

	Wild Rice		
Year	Safe Harvest	Declaration	Total Harvest
1989	0	0	0
1990	152	82	0
1991	134	73	1
1992	128	70	34
1993	130	70	0
1994	0	0	0
1995	0	0	0
1996	124	105	0
1997	124	68	0
1998	124	68	67
1999	122	67	65
2000	25	9	9
2001	21	8	0
2002	127	69	34
2003	127	69	56
2004	128	70	27
2005	26	10	0
2006	22	8	0
2007	122	67	30
2008	122	67	39
2009	119	65	0
2010	121	66	0
2011	123	67	0
2012	119	65	0
2013	111	94	0

Manitowish Chain - Individual Lake Muskellunge Spear Harvest Data

	Alder			Benson			Clear			Fawn		
Year	Safe Harvest	Declaration	Total Harvest	Safe Harvest	Declaration	Total Harvest	Safe Harvest	Declaration	Total Harvest	Safe Harvest	Declaration	Total Harvest
1989	8	4	0	-	-	-	0	6	1	-	-	-
1990	0	4	0	-	-	-	0	6	5	-	-	-
1991	0	4	0	-	-	-	0	6	4	-	-	-
1992	0	3	0	-	-	-	0	6	3	-	-	-
1993	0	3	0	-	-	-	0	5	5	-	-	-
1994	0	4	0	-	-	-	0	6	2	-	-	-
1995	0	4	0	-	-	-	0	6	6	-	-	-
1996	0	4	0	-	-	-	0	7	3	-	-	-
1997	0	4	0	-	-	-	0	7	5	-	-	-
1998	0	4	2	-	-	-	0	6	0	-	-	-
1999	0	4	0	-	-	-	13	6	4	-	-	-
2000	7	3	0	-	-	-	12	6	3	-	-	-
2001	7	3	0	-	-	-	12	6	2	-	-	-
2002	7	3	0	-	-	-	12	6	0	-	-	-
2003	8	4	0	-	-	-	12	6	3	-	-	-
2004	8	4	0	-	-	-	12	6	1	0	1	0
2005	8	4	0	-	-	-	13	7	3	0	1	0
2006	7	3	0	-	-	-	17	10	1	-	-	-
2007	8	4	0	-	-	-	13	7	0	-	-	-
2008	9	5	0	-	-	-	14	8	0	-	-	-
2009	9	5	0	-	-	-	14	8	6	-	-	-
2010	9	5	0	2	1	0	14	8	8	0	0	0
2011	9	5	0	2	1	0	14	8	7	4	2	0
2012	8	4	0	2	1	0	13	7	6	4	2	0
2013	7	4	0	2	1	0	11	6	4	3	1	0

	Island			Little Star			Manitowish			Rest		
Year	Safe Harvest	Declaration	Total Harvest	Safe Harvest	Declaration	Total Harvest	Safe Harvest	Declaration	Total Harvest	Safe Harvest	Declaration	Total Harvest
1989	0	10	2	7	3	0	0	6	0	0	7	0
1990	0	10	2	7	3	0	0	6	0	0	7	0
1991	0	10	0	7	3	2	0	6	0	0	7	1
1992	0	9	0	7	3	0	0	6	2	0	7	0
1993	0	8	7	7	0	0	0	5	0	0	6	0
1994	0	10	0	7	0	0	0	0	0	0	7	0
1995	0	10	2	7	0	0	0	0	0	0	7	4
1996	0	11	0	7	4	0	0	7	2	0	8	1
1997	0	11	2	7	4	0	0	6	3	0	7	3
1998	0	9	1	7	3	0	0	6	0	0	6	0
1999	19	9	5	7	3	0	12	6	0	14	7	0
2000	18	9	0	7	3	0	11	5	0	13	6	0
2001	19	9	0	7	3	0	11	5	0	13	6	1
2002	19	9	0	7	3	0	11	5	0	13	6	1
2003	19	9	0	7	3	0	12	6	1	13	6	3
2004	18	9	0	7	3	0	12	6	0	13	6	2
2005	19	8	1	8	4	0	12	6	0	14	7	1
2006	27	13	1	6	3	0	13	6	2	19	9	5
2007	19	9	1	8	4	4	12	6	2	14	7	1
2008	21	12	0	9	5	0	14	8	6	15	8	3
2009	21	12	0	9	5	0	14	8	0	15	8	0
2010	21	12	1	9	5	0	14	8	0	15	8	4
2011	20	11	0	9	5	0	14	8	1	15	8	0
2012	20	11	0	8	4	0	13	7	2	14	8	6
2013	16	9	0	7	4	1	11	6	0	12	7	0

Manitowish Chain - Individual Lake Muskellunge Spear Harvest Data

	Spider			Stone			Sturgeon			Vance		
Year	Safe Harvest	Declaration	Total Harvest	Safe Harvest	Declaration	Total Harvest	Safe Harvest	Declaration	Total Harvest	Safe Harvest	Declaration	Total Harvest
1989	0	4	0	-	-	-	-	-	-	-	-	-
1990	0	4	0	-	-	-	-	-	-	-	-	-
1991	0	4	0	-	-	-	-	-	-	-	-	-
1992	0	3	0	-	-	-	-	-	-	-	-	-
1993	0	3	3	-	-	-	-	-	-	-	-	-
1994	0	0	0	-	-	-	-	-	-	-	-	-
1995	0	0	0	-	-	-	-	-	-	-	-	-
1996	0	4	1	-	-	-	-	-	-	-	-	-
1997	0	4	0	-	-	-	-	-	-	-	-	-
1998	0	4	1	-	-	-	-	-	-	-	-	-
1999	8	4	2	-	-	-	-	-	-	-	-	-
2000	7	3	0	-	-	-	-	-	-	-	-	-
2001	7	3	0	-	-	-	-	-	-	-	-	-
2002	7	3	0	-	-	-	-	-	-	-	-	-
2003	8	4	0	-	-	-	-	-	-	-	-	-
2004	8	4	0	-	-	-	-	-	-	-	-	-
2005	8	4	0	-	-	-	-	-	-	-	-	-
2006	21	10	0	-	-	-	-	-	-	-	-	-
2007	8	4	2	-	-	-	-	-	-	-	-	-
2008	9	5	2	-	-	-	-	-	-	-	-	-
2009	9	5	0	-	-	-	-	-	-	-	-	-
2010	9	5	0	6	3	0	2	1	0	2	1	0
2011	9	5	0	6	3	0	2	1	0	2	1	0
2012	8	4	1	5	2	0	2	1	0	2	1	0
2013	7	4	0	5	2	0	2	1	0	2	1	0

	Wild Rice		
Year	Safe Harvest	Declaration	Total Harvest
1989	0	0	0
1990	0	4	0
1991	0	4	0
1992	0	3	0
1993	0	3	0
1994	0	0	0
1995	0	0	0
1996	0	4	0
1997	0	4	0
1998	0	4	2
1999	8	4	3
2000	7	3	0
2001	7	3	0
2002	7	3	2
2003	8	4	0
2004	8	4	0
2005	8	4	0
2006	8	4	0
2007	8	4	4
2008	9	5	3
2009	9	5	0
2010	9	5	0
2011	9	5	0
2012	8	4	0
2013	7	4	0