# A

# APPENDIX A

## Public Participation Materials

## Presentation Outline

- Meeting Objective
- Study Results
  - Water Quality
  - Paleoecology
  - Watershed
  - Shoreland
  - Aquatic Plants
  - Fishery

  *Stakeholder Survey*
- "Big Picture"
- Implementation Plan Development

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## Meeting Objective

### Planning Committee Meetings

Study Results
Conclusions & Initial Recommendations — *Planning Meeting I*

Management Goals
Management Actions
Timeframe
Facilitator(s) — *Planning Meeting II*

*Implementation Plan*

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## Summary of Project Results

**Aquatic Plants**
- Aquatic plant community is of moderate quality and very high biomass
- Not much difference found between 2007 and 2017 plant surveys

**Water Quality**
- Water is good overall
- Aquatic plant community has positive and negative impacts on water quality

**Watershed and Immediate Shorelands**
- Watershed is in excellent shape currently
- Past actions in watershed may be impacting Horsehead ecology currently
- State-owned land assures natural shorelands and coarse woody habitat

**Fisheries**
- Not much data available
- Fish kills occurring as recently as 2006, 2008, and 2016 determine fishery structure

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## Wisconsin Ecoregions

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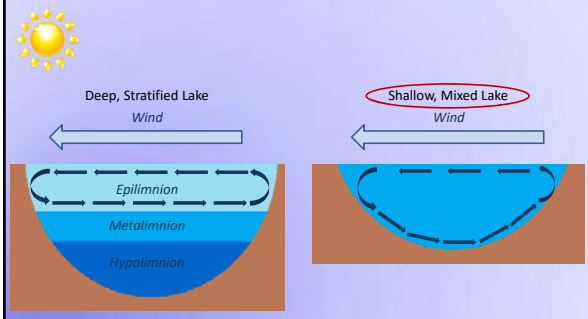
## Wisconsin Lakes Classification

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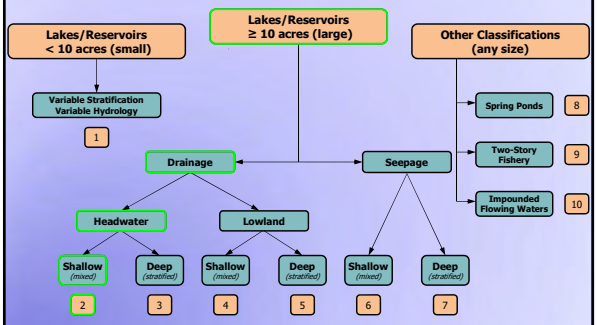
## Wisconsin Lakes Natural Community Types

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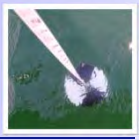
## Introduction to Lake Water Quality

**Phosphorus**
Naturally occurring & essential for all life
Regulates phytoplankton biomass in **most** WI lakes
Most often 'limiting plant nutrient' (shortest supply) **23:1**
Human activity often increases P delivery to lakes

**Chlorophyll-*a***
Pigment used in photosynthesis
Used as surrogate for phytoplankton biomass

**Secchi Disk Transparency**
Measure of water clarity
Measured using a Secchi disk



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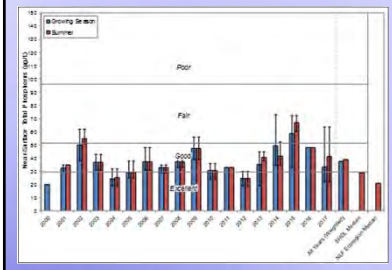
## Total Phosphorus Long-Term Trends




**Average summer = 39 µg/L**
- ***Good* for SHDL**
- **Higher than ecoregion & SHDL medians**
- **Variable, no trend**

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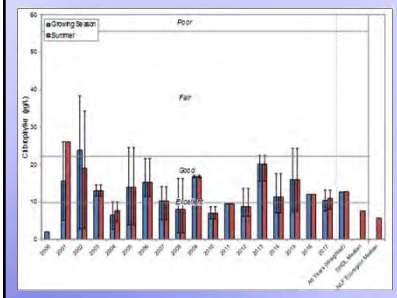
## Chlorophyll-a Long-Term Trends




**Average summer = 13 µg/L**
- ***Good* for SHDL**
- **Higher than ecoregion & SHDL medians**
- **Macrophyte growth assures low Chl-a**
- **Variable, no trend**

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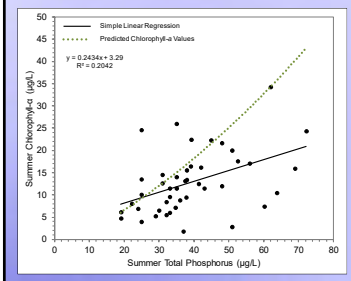
## Chlorophyll-a Long-Term Trends




**Why are chlorophyll-a values lower than predicted?**
- Dense growth of aquatic plants provide habitat for zooplankton
- Non-rooted vegetation (i.e. coontail) compete with phytoplankton
  - Nutrients
  - Light
  - Allelopathy

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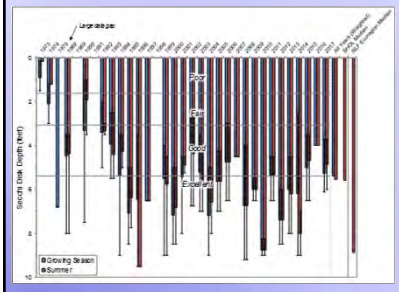
## Secchi Disk Clarity Long-Term Trends




**Average summer = 5.5 feet**
- ***Excellent* for SHDL**
- **Similar to SHDL median**
- **Lower than ecoregion median**
- **Variable, no trend**

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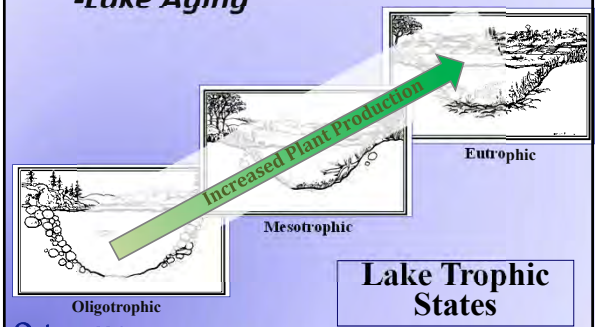
## Eutrophication
### -Lake Aging

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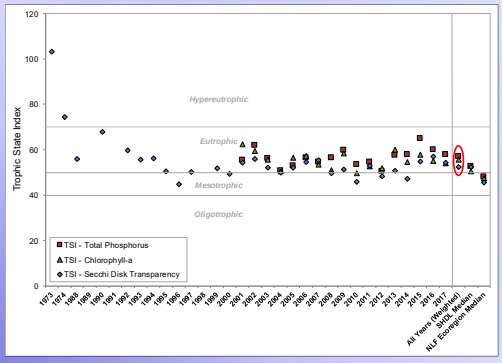
## Trophic State

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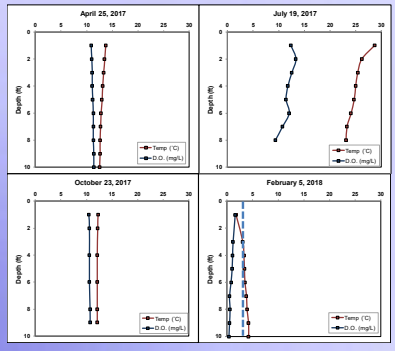
## Dissolved Oxygen Levels

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## Additional Water Quality Parameters

**pH**
Alkaline with a value of 10.3 in summer 2017
Likely elevated by macrophyte photosynthesis
Limits susceptibility of zebra mussel establishment

**Alkalinity**
37.8 mg/L as $CaCO_3$
Not sensitive to acid rain

**Calcium**
11.2 mg/L as Ca
Not sensitive to acid rain
Very low susceptibility to zebra mussel establishment

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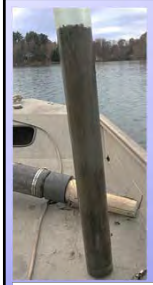
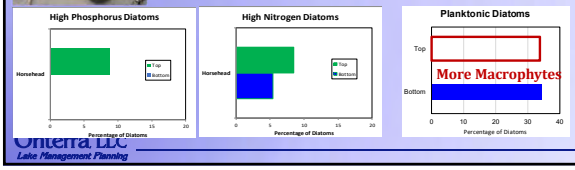
## Paleoecology



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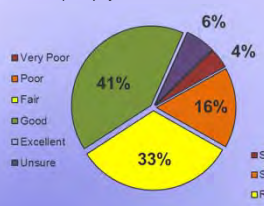
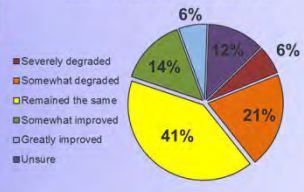
## Horsehead Lake Stakeholder Perceptions of Water Quality

*How would you describe the current water quality of Horsehead Lake?*




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

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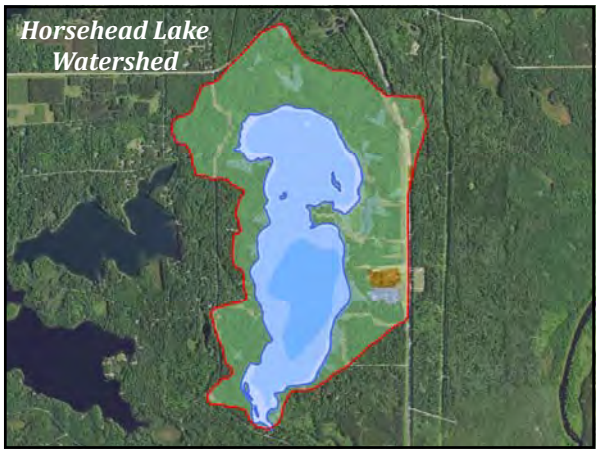
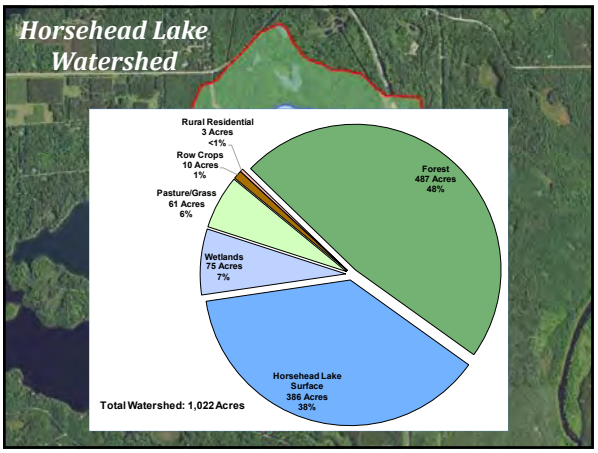
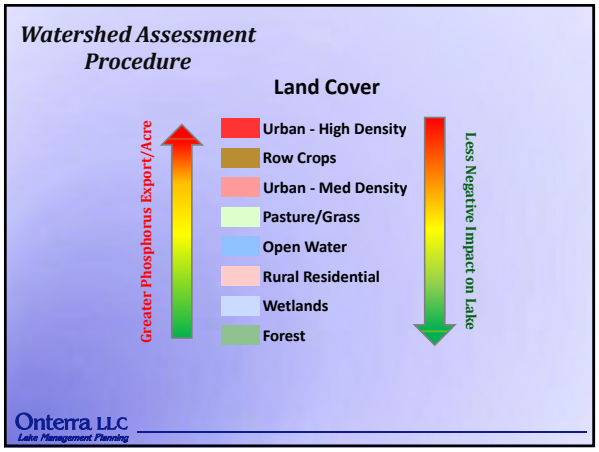

Horsehead Lake
Watershed


Horsehead Lake
Watershed
Rural Residential
3 Acres
<1%
Row Crops
10 Acres
1%
Pasture/Grass
61 Acres
6%
Wetlands
75 Acres
7%
Forest
487 Acres
48%
Horsehead Lake
Surface
386 Acres
38%
Total Watershed: 1,022 Acres


Watershed Assessment
Procedure
Land Cover
Urban - High Density
Row Crops
Urban - Med Density
Pasture/Grass
Open Water
Rural Residential
Wetlands
Forest
Greater Phosphorus Export/Acre
Less Negative Impact on Lake
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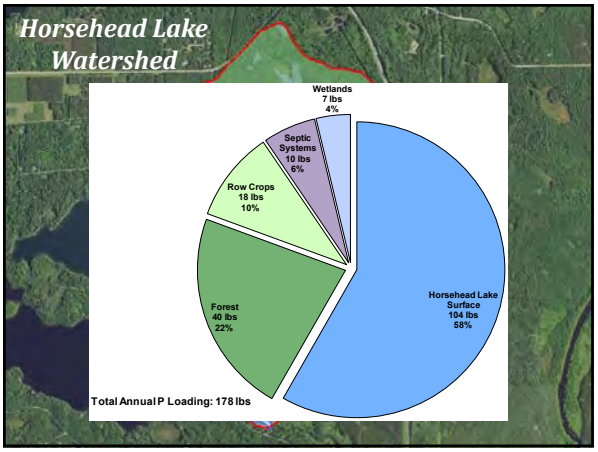
Horsehead Lake
Watershed
Wetlands
7 lbs
4%
Septic
Systems
10 lbs
6%
Row Crops
18 lbs
10%
Forest
40 lbs
22%
Horsehead Lake
Surface
104 lbs
58%
Total Annual P Loading: 178 lbs

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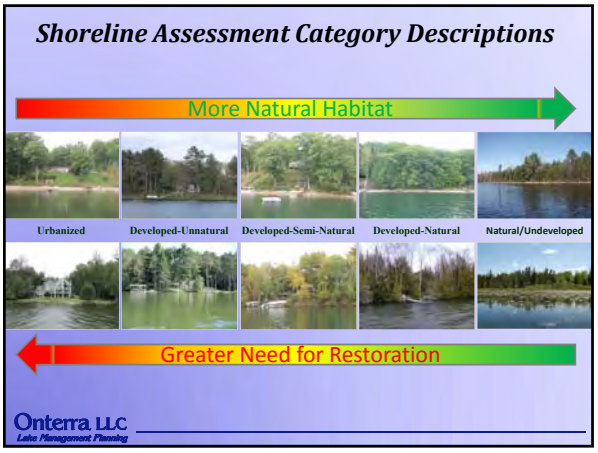
Shoreline Assessment Category Descriptions
More Natural Habitat
Urbanized
Developed-Unnatural
Developed-Semi-Natural
Developed-Natural
Natural/Undeveloped
Greater Need for Restoration
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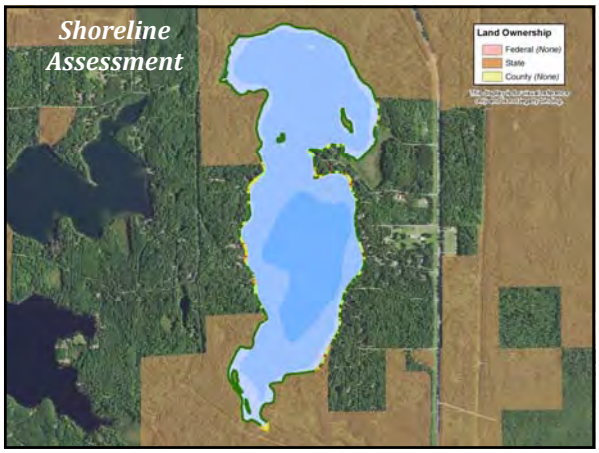


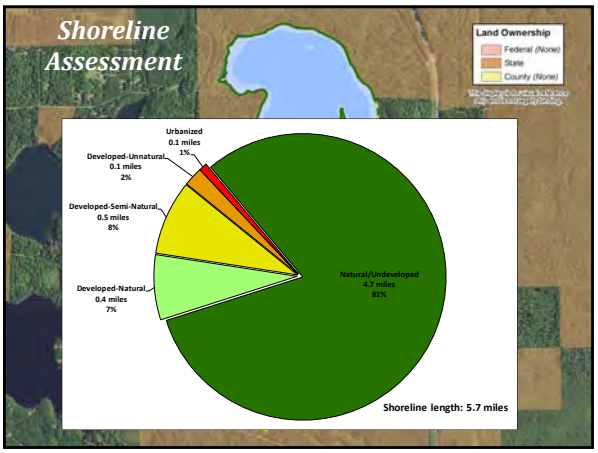


## Coarse Woody Habitat

- 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 system.

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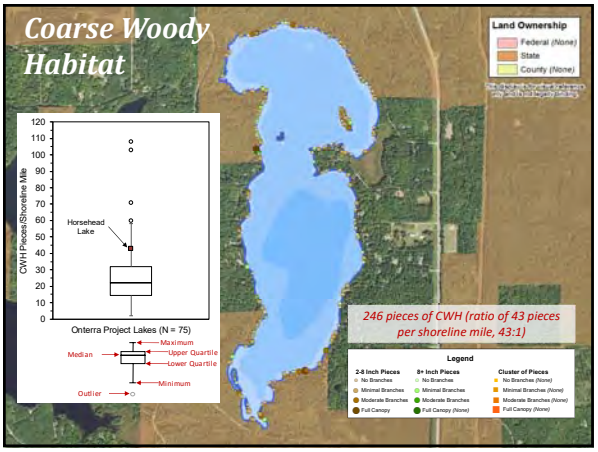


## Aquatic Plant Surveys

- Determine changes in plant community from past surveys completed in 2007
- Assess both native and non-native populations
- Numerous surveys completed in 2017
  - Early-Season AIS Survey
  - Whole-Lake Point-Intercept Survey
  - Emergent/Floating-Leaf Community Mapping Survey
  - EWM Peak-Biomass Survey

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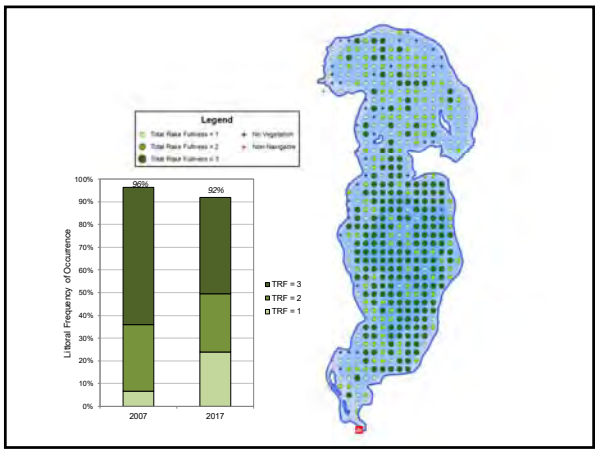
**Horsehead Lake**
52-meter Resolution
500 Total Points
Compare: 2007




## Aquatic Plant Species List

**28 Native Species**
**3 Non-Native Species**
Pale yellow iris
Eurasian watermilfoil
Curly-leaf pondweed

| Growth Form | Scientific Name | Common Name | Coefficient of Conservatism (C) | 1976 (NLS) | 1992 (NLS) | 2007 (Onterra) | 2017 (Onterra) |
|---|---|---|---|---|---|---|---|
| Emergent | *Alisma triviale* | Northern waterplantain | 4 | | | X | |
| | *Calla palustris* | Water arum | 9 | | | X | I |
| | *Carex comosa* | Bristly sedge | 5 | | | X | |
| | *Carex utriculata* | Common yellow lake sedge | 7 | | | | I |
| | *Eleocharis palustris* | Creeping spikerush | 6 | | | | I |
| | *Iris pseudacorus* | Pale yellow iris | Exotic | | | | I |
| | *Iris versicolor* | Northern blue flag | 5 | | | | I |
| | *Juncus effusus* | Soft rush | 4 | | | | I |
| | *Pontederia cordata* | Pickerelweed | 9 | | X | | |
| | *Sagittaria latifolia* | Common arrowhead | 3 | X | I | X | I |
| | *Schoenoplectus acutus* | Hardstem bulrush | 5 | | | | I |
| | *Schoenoplectus tabernaemontani* | Softstem bulrush | 4 | X | I | X | I |
| | *Sparganium eurycarpum* | Common bur-reed | 5 | | | X | |
| | *Typha latifolia* | Broad-leaved cattail | 1 | X | I | X | |
| | *Typha* spp. | Cattail spp. | 1 | | | | I |
| FL | *Brasenia schreberi* | Watershield | 7 | | | X | X |
| | *Nuphar variegata* | Spatterdock | 6 | X | X | X | X |
| | *Nymphaea odorata* | White water lily | 6 | X | X | X | X |
| | *Persicaria amphibia* | Water smartweed | 5 | X | X | X | I |
| | *Sparganium angustifolium* | Narrow-leaf bur-reed | 9 | | | X | I |
| FL/E | *Sparganium* sp. (sterile) | Bur-reed sp. (sterile) | N/A | | | | I |
| Submergent | *Ceratophyllum demersum* | Coontail | 3 | | | X | X |
| | *Chara* spp. | Muskgrasses | 7 | | | X | X |
| | *Elodea canadensis* | Common waterweed | 3 | X | X | X | X |
| | *Myriophyllum sibiricum* | Northern watermilfoil | 7 | X | | X | X |
| | *Myriophyllum spicatum* | Eurasian watermilfoil | Exotic | | | X | |
| | *Nitella* spp. | Stoneworts | 7 | | | X | |
| | *Potamogeton amplifolius* | Large-leaf pondweed | 7 | | | X | X |
| | *Potamogeton crispus* | Curly-leaf pondweed | Exotic | | X | X | X |
| | *Potamogeton gramineus* | Variable-leaf pondweed | 7 | | | X | |
| | *Potamogeton natans* | Floating-leaf pondweed | 5 | | | | I |
| | *Potamogeton pusillus* | Small pondweed | 7 | | X | X | |
| | *Potamogeton richardsonii* | Clasping-leaf pondweed | 5 | X | | X | X |
| | *Potamogeton robbinsii* | Fern-leaf pondweed | 8 | X | | X | X |
| | *Potamogeton zosteriformis* | Flat-stem pondweed | 6 | X | X | X | X |
| | *Sagittaria* sp. (rosette) | Arrowhead sp. (rosette) | N/A | | | | X |
| | *Stuckenia pectinata* | Sago pondweed | 3 | X | | X | X |
| | *Vallisneria americana* | Wild celery | 6 | X | | X | X |
| S/E | *Juncus pelocarpus* | Brown-fruited rush | 8 | | | X | |
| FF | *Lemna minor* | Lesser duckweed | 5 | X | X | X | |

FL = Floating-leaf; FL/E = Floating-leaf and Emergent; S/E = Submergent and Emergent; FF = Free-floating
X = Located on lake during point-intercept survey; I = Incidental Species

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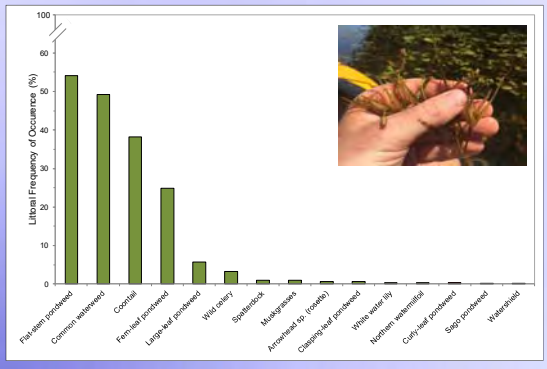
## 2017 Littoral Frequency of Occurrence



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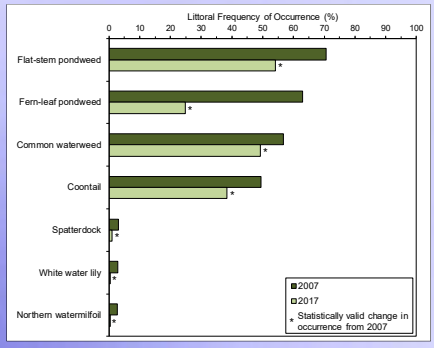
## 2007-2017 LFOO Compare

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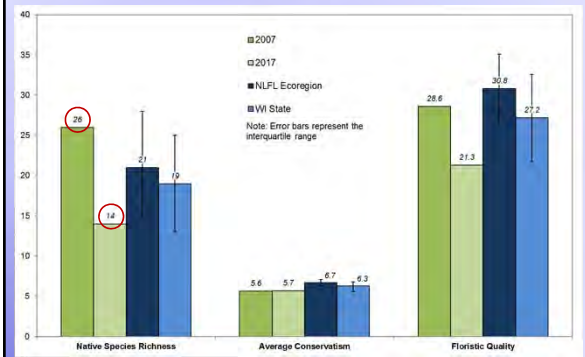
## Floristic Quality

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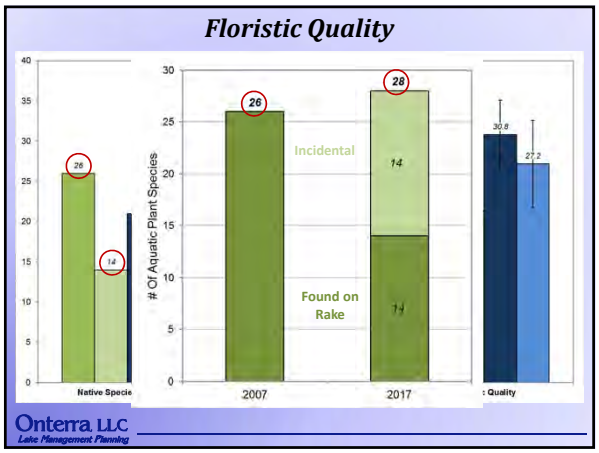
Floristic Quality
# Of Aquatic Plant Species
Incidental
Found on Rake
26
14
28
14
14
30.8
27.2
Native Species
2007
2017
Quality
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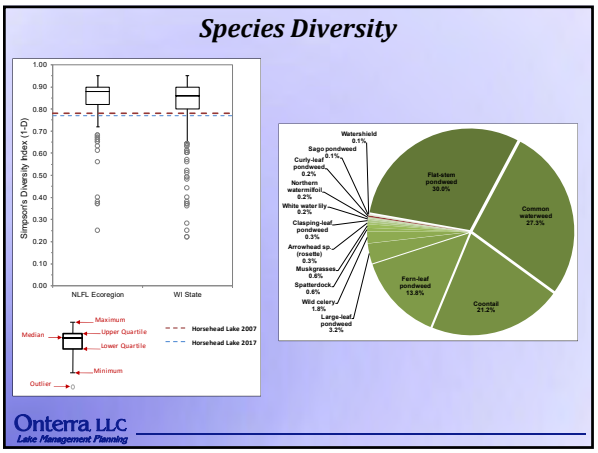
Species Diversity
Simpson's Diversity Index (1-D)
NLFL Ecoregion
WI State
Maximum
Upper Quartile
Median
Lower Quartile
Minimum
Outlier
Horsehead Lake 2007
Horsehead Lake 2017
Watershield 0.1%
Sago pondweed 1.1%
Curly-leaf pondweed 0.2%
Northern watermilfoil 0.2%
White water lily 0.2%
Clasping-leaf pondweed 0.3%
Arrowhead sp. (rosette) 0.3%
Muskgrasses 0.6%
Spatterdock 0.6%
Wild celery 1.9%
Large-leaf pondweed 3.2%
Flat-stem pondweed 30.8%
Common watermeal 27.5%
Fern-leaf pondweed 13.8%
Coontail 21.2%
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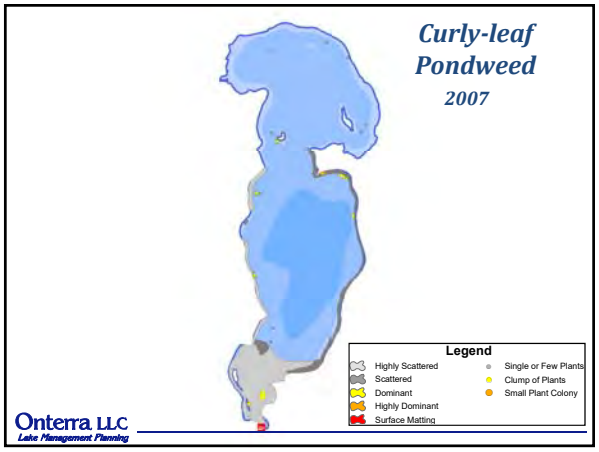
Curly-leaf Pondweed
2007
Legend
Highly Scattered
Scattered
Dominant
Highly Dominant
Surface Matting
Single or Few Plants
Clump of Plants
Small Plant Colony
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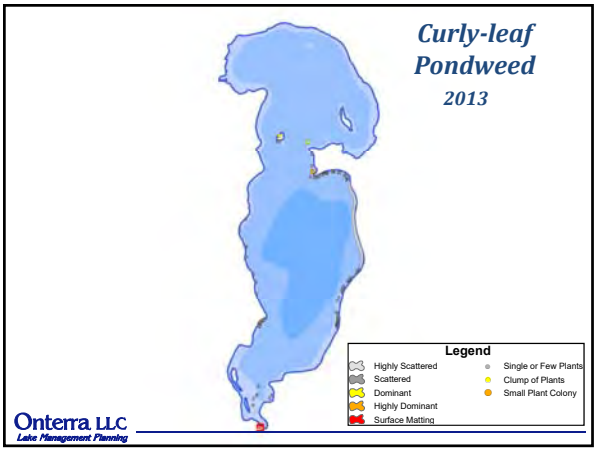
Curly-leaf Pondweed
2013
Legend
Highly Scattered
Scattered
Dominant
Highly Dominant
Surface Matting
Single or Few Plants
Clump of Plants
Small Plant Colony
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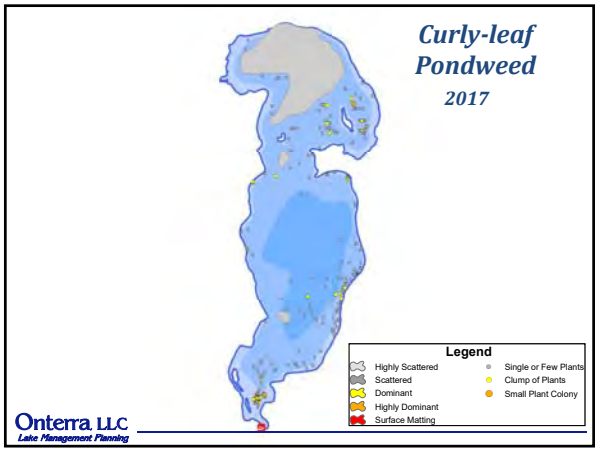
Curly-leaf Pondweed
2017
Legend
Highly Scattered
Scattered
Dominant
Highly Dominant
Surface Matting
Single or Few Plants
Clump of Plants
Small Plant Colony
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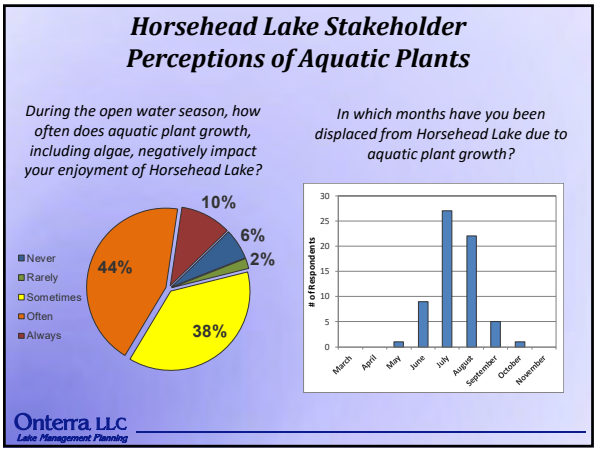
Horsehead Lake Stakeholder Perceptions of Aquatic Plants
During the open water season, how often does aquatic plant growth, including algae, negatively impact your enjoyment of Horsehead Lake?
Never
Rarely
Sometimes
Often
Always
10%
6%
2%
44%
38%
In which months have you been displaced from Horsehead Lake due to aquatic plant growth?
# of Respondents
March
April
May
June
July
August
September
October
November
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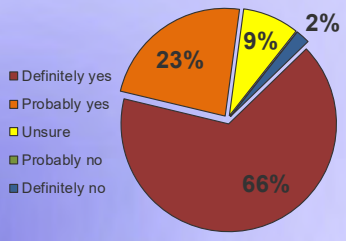
## Horsehead Lake Stakeholder Perceptions of Aquatic Plants

*Do you believe aquatic plant control is needed in Horsehead Lake?*

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## Mechanical Harvesting

**2017**

Horsehead Lake Harvesting
July 12-24, 2017 (91 hours)
35 Harvester loads (52 ton)
Approximately 54 acres

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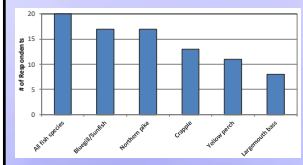
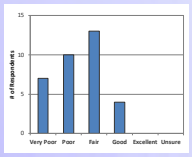
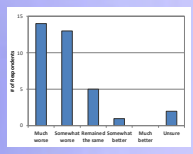
*What species of fish do you like to catch?*




*How would you describe the current quality of fishing?*




*How has the quality of fishing changed since you started fishing the lake?*

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## Conclusions

**Water Quality**

- Overall, water quality of Horsehead Lake is good and has not changed since beginning of record
- Horsehead Lake is highly productive with that productivity showing in its high level of vascular plant biomass
- Aquatic plant biomass is partially responsible for high phosphorus concentrations, but also responsible for low algal biomass and high water clarity

**Watershed & Immediate Shoreline**

- Watershed and shoreland are in great condition, but there is always room for improvement on privately-owned, developed properties

**Aquatic Plant Community**

- Plant community is as expected for shallow, eutrophic lake
- Plant biomass causes navigation issues starting in mid-summer, so continued use of mechanical harvesting is warranted

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## Planning Meeting II

**Primary Objective:** Create implementation plan framework

**Steps to Achieve Objective:**

1. Discuss challenges facing lake and lake group
2. Convert challenges to management goals
3. Create management actions to meet management goals
4. Determine timeframes and facilitators to carry out actions

**Assignment for Planning Meeting II**

1. Create list of challenges facing lake and lake group
2. Review stakeholder survey results
3. Send potential report section edits and questions to Tim

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# B

# APPENDIX B

## Stakeholder Survey Response Charts and Comments

**Horsehead Lake - Anonymous Stakeholder Survey**

*Surveys Distributed:* 100
*Surveys Returned:* 49
*Response Rate:* 49%

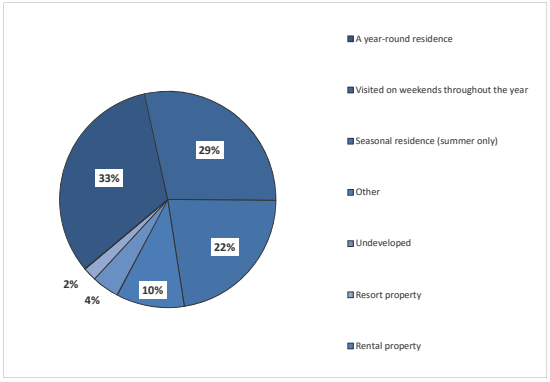
***Horsehead Lake Property***

**1. Is your property on the lake or off the lake? Please select one choice.**

| Answer Options | Response Percent | Response Count |
|---|---|---|
| On the lake | 81.6% | 40 |
| Off the lake | 18.4% | 9 |
| *answered question* | | 49 |
| *skipped question* | | 0 |

**2. How is your property on Horsehead Lake utilized?**

| Answer Options | Response Percent | Response Count |
|---|---|---|
| A year-round residence | 32.7% | 16 |
| Visited on weekends throughout the year | 28.6% | 14 |
| Seasonal residence (summer only) | 22.5% | 11 |
| Other | 10.2% | 5 |
| Undeveloped | 4.1% | 2 |
| Resort property | 2.0% | 1 |
| Rental property | 0.0% | 0 |
| *answered question* | | 49 |
| *skipped question* | | 0 |

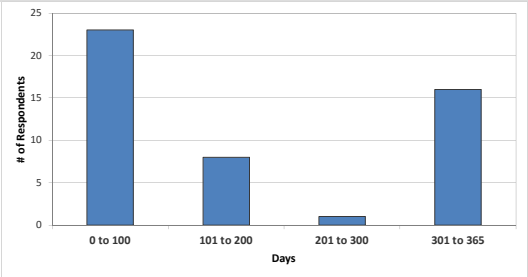



| Number | Other (please specify) |
|---|---|
| 1 | visited on weekends and weekly periods spring through fall |
| 2 | about 3-4 days /week |
| 3 | vacation rental cabins/permanent RV seasonal 12 month sites |
| 4 | Weekends throughout the year and summer residence |
| 5 | Own two homes, back and forth during the year |

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

| Answer Options | Response Count |
|---|---|
| | 48 |
| *answered question* | 48 |
| *skipped question* | 1 |

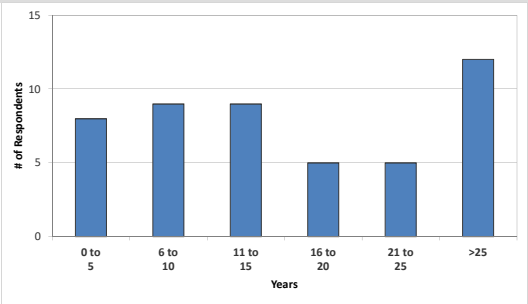
| Category (# of days) | Responses | |
|---|---|---|
| 0 to 100 | 23 | 48% |
| 101 to 200 | 8 | 17% |
| 201 to 300 | 1 | 2% |
| 301 to 365 | 16 | 33% |




**4. How long have you owned your property on Horsehead Lake?**

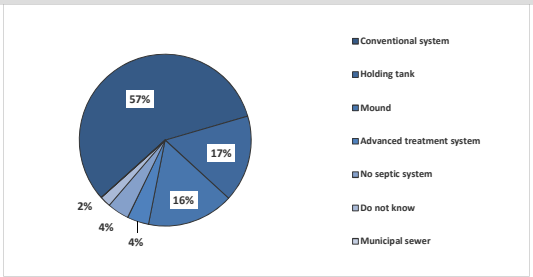
| Answer Options | Response Count |
|---|---|
| | 48 |
| *answered question* | 48 |
| *skipped question* | 1 |

| Category (# of years) | Responses | % Response |
|---|---|---|
| 0 to 5 | 8 | 17% |
| 6 to 10 | 9 | 19% |
| 11 to 15 | 9 | 19% |
| 16 to 20 | 5 | 10% |
| 21 to 25 | 5 | 10% |
| >25 | 12 | 25% |



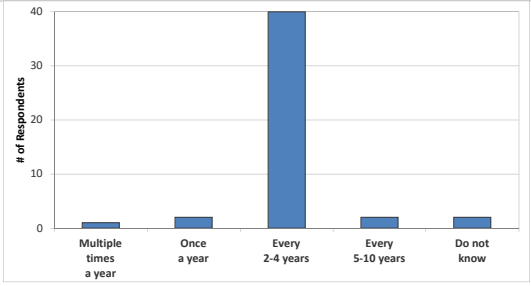
**5. What type of septic system does your property utilize?**

| Answer Options | Response Percent | Response Count |
|---|---|---|
| Conventional system | 57.1% | 28 |
| Holding tank | 16.3% | 8 |
| Mound | 16.3% | 8 |
| Advanced treatment system | 4.1% | 2 |
| No septic system | 4.1% | 2 |
| Do not know | 2.0% | 1 |
| Municipal sewer | 0.0% | 0 |
| *answered question* | | 49 |
| *skipped question* | | 0 |




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

| Answer Options | Response Percent | Response Count |
|---|---|---|
| Multiple times a year | 2.1% | 1 |
| Once a year | 4.3% | 2 |
| Every 2-4 years | 85.1% | 40 |
| Every 5-10 years | 4.3% | 2 |
| Do not know | 4.3% | 2 |
| *answered question* | | 47 |
| *skipped question* | | 2 |

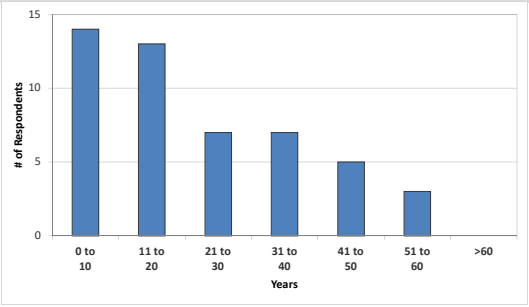



***Recreational Activity on Horsehead Lake***

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

| Answer Options | Response Count |
|---|---|
| | 49 |
| *answered question* | 49 |
| *skipped question* | 0 |

| Category (# of days) | Responses | % Response |
|---|---|---|
| **0 to 10** | **14** | **29%** |
| **11 to 20** | **13** | **27%** |
| **21 to 30** | **7** | **14%** |
| **31 to 40** | **7** | **14%** |
| **41 to 50** | **5** | **10%** |
| **51 to 60** | **3** | **6%** |
| **>60** | **0** | **0%** |



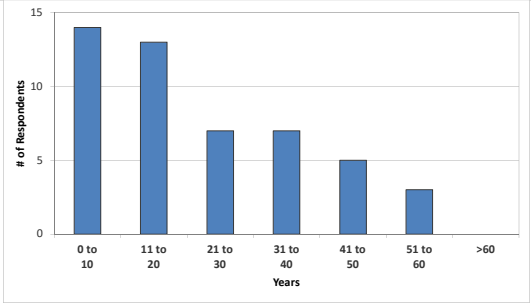

**8. Have you personally fished on Horsehead Lake in the past three years?**

| Answer Options | Response Percent | Response Count |
|---|---|---|
| Yes | 71.4% | 35 |
| No | 28.6% | 14 |
| *answered question* | | 49 |
| *skipped question* | | 0 |

**9. For how many years have you fished Horsehead Lake?**

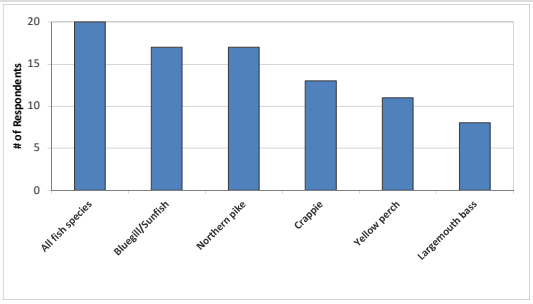
| Answer Options | Response Count |
|---|---|
| | 34 |
| *answered question* | 34 |
| *skipped question* | 15 |

| Category (# of days) | Responses | % Response |
|---|---|---|
| **0 to 10** | **11** | **22%** |
| **11 to 20** | **7** | **14%** |
| **21 to 30** | **5** | **10%** |
| **31 to 40** | **6** | **12%** |
| **41 to 50** | **4** | **8%** |
| **51 to 60** | **1** | **2%** |
| **>60** | **0** | **0%** |



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

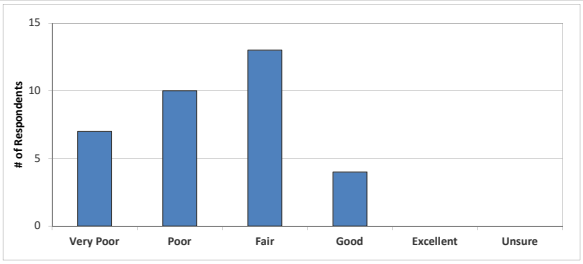
| Answer Options | Response Percent | Response Count |
|---|---|---|
| All fish species | 57.1% | 20 |
| Bluegill/Sunfish | 48.6% | 17 |
| Northern pike | 48.6% | 17 |
| Crappie | 37.1% | 13 |
| Yellow perch | 31.4% | 11 |
| Largemouth bass | 22.9% | 8 |
| Other (please specify) | 2.9% | 1 |
| *answered question* | | 35 |
| *skipped question* | | 14 |




| Number | Other (please specify) |
|---|---|
| 1 | mostly bass |

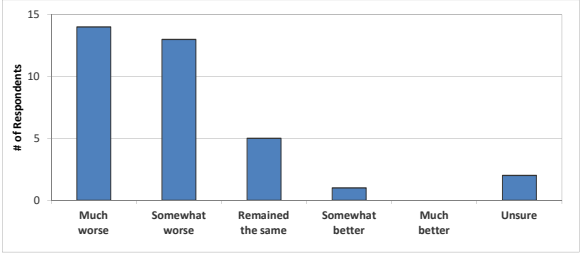
**11. How would you describe the current quality of fishing on Horsehead Lake?**

| Answer Options | Very Poor | Poor | Fair | Good | Excellent | Unsure | Response Count |
|---|---|---|---|---|---|---|---|
| | 7 | 10 | 13 | 4 | 0 | 0 | 34 |
| *answered question* | | | | | | | 34 |
| *skipped question* | | | | | | | 15 |



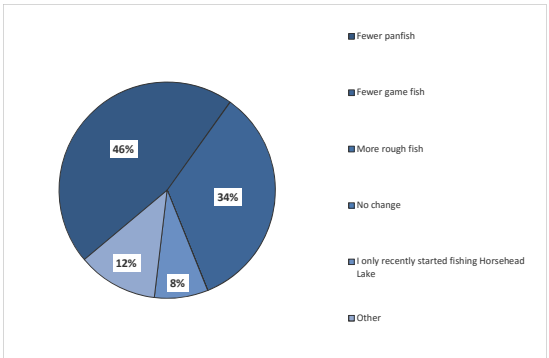

**12. How has the quality of fishing changed on Horsehead Lake since you have started fishing the lake?**

| Answer Options | Much worse | Somewhat worse | Remained the same | Somewhat better | Much better | Unsure | Response Count |
|---|---|---|---|---|---|---|---|
| | 14 | 13 | 5 | 1 | 0 | 2 | 35 |
| *answered question* | | | | | | | 35 |
| *skipped question* | | | | | | | 14 |




**13. Since the winter of 2013-2014, how has the quality of fishing changed on the lake?**

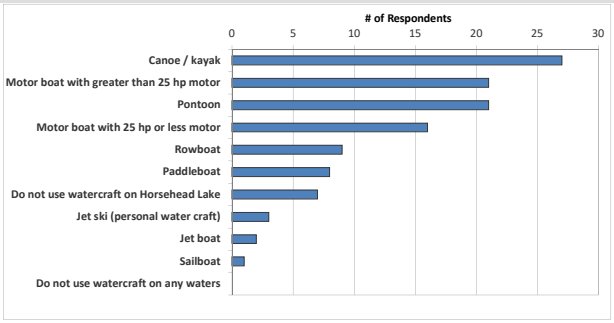
| Answer Options | Response Percent | Response Count |
|---|---|---|
| Fewer panfish | 65.7% | 23 |
| Fewer game fish | 48.6% | 17 |
| More rough fish | 0.0% | 0 |
| No change | 0.0% | 0 |
| I only recently started fishing Horsehead Lake | 11.4% | 4 |
| Other | 17.1% | 6 |
| *answered question* | | 35 |
| *skipped question* | | 14 |




| Number | Other (please specify) |
|---|---|
| 1 | Northerns small in size |
| 2 | nice size perch,Northerns are small, Blue Gills and Crappies non exsistant |
| 3 | I didn't fish enough |
| 4 | all fish are small in size |
| 5 | the fishing was great 2017 thru Jan 2018/ it is my belief we have had another "significant fish kill" |
| 6 | NO GAME FISH. |

**14. What types of watercraft do you currently use on Horsehead Lake?**

| Answer Options | Response Percent | Response Count |
|---|---|---|
| Canoe / kayak | 55.1% | 27 |
| Motor boat with greater than 25 hp motor | 42.9% | 21 |
| Pontoon | 42.9% | 21 |
| Motor boat with 25 hp or less motor | 32.7% | 16 |
| Rowboat | 18.4% | 9 |
| Paddleboat | 16.3% | 8 |
| Do not use watercraft on Horsehead Lake | 14.3% | 7 |
| Jet ski (personal water craft) | 6.1% | 3 |
| Jet boat | 4.1% | 2 |
| Sailboat | 2.0% | 1 |
| Do not use watercraft on any waters | 0.0% | 0 |
| *answered question* | | 49 |
| *skipped question* | | 0 |

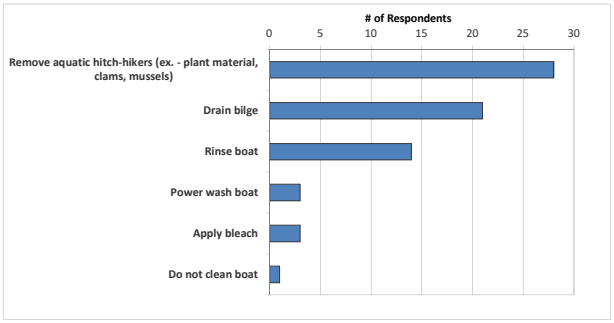



**15. Do you use your watercraft on waters other than Horsehead Lake?**

| Answer Options | Response Percent | Response Count |
|---|---|---|
| Yes | 79.2% | 38 |
| No | 20.8% | 10 |
| *answered question* | | 48 |
| *skipped question* | | 1 |

**16. What is your typical cleaning routine after using your watercraft on waters other than Horsehead Lake?**

| Answer Options | Response Percent | Response Count |
|---|---|---|
| Remove aquatic hitch-hikers (ex. - plant material, clams, mussels) | 84.9% | 28 |
| Drain bilge | 63.6% | 21 |
| Rinse boat | 42.4% | 14 |
| Power wash boat | 9.1% | 3 |
| Apply bleach | 9.1% | 3 |
| Do not clean boat | 3.0% | 1 |
| Other | 0.0% | 10 |
| *answered question* | | 33 |
| *skipped question* | | 16 |

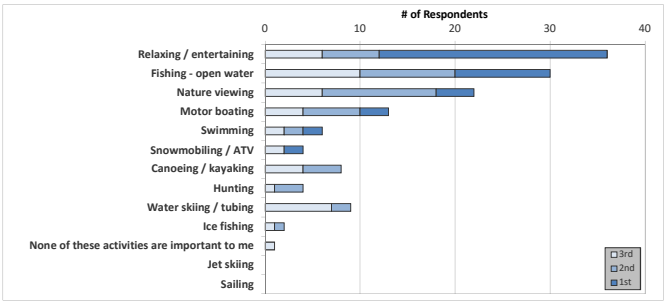



| Number | Other (please specify) |
|---|---|
| 1 | na |
| 2 | Keep out of water for extended period |
| 3 | Wipe boat down |
| 4 | Cleanser and brushes/bucket |
| 5 | Bleach and detergent |
| 6 | Don't use on other lakes |
| 7 | Have only used boats off Horsehead Lake rarely and not for several years. |
| 8 | Do not move boat from lake to lake |
| 9 | Do not use watercraft on other lakes besides horsehead |
| 10 | Clean and dry live well. |

**17. For the list below, rank up to three activities that are important reasons for owning your property on Horsehead Lake, with 1 being the most important.**

| Answer Options | 1st | 2nd | 3rd | Rating Average | Response Count |
|---|---|---|---|---|---|
| Relaxing / entertaining | 24 | 6 | 6 | 1.5 | 36 |
| Fishing - open water | 10 | 10 | 10 | 2 | 30 |
| Nature viewing | 4 | 12 | 6 | 2.09 | 22 |
| Motor boating | 3 | 6 | 4 | 2.08 | 13 |
| Swimming | 2 | 2 | 2 | 2 | 6 |
| Snowmobiling / ATV | 2 | 0 | 2 | 2 | 4 |
| Canoeing / kayaking | 0 | 4 | 4 | 2.5 | 8 |
| Hunting | 0 | 3 | 1 | 2.25 | 4 |
| Water skiing / tubing | 0 | 2 | 7 | 2.78 | 9 |
| Ice fishing | 0 | 1 | 1 | 2.5 | 2 |
| None of these activities are important to me | 0 | 0 | 1 | 3 | 1 |
| Jet skiing | 0 | 0 | 0 | 0 | 0 |
| Sailing | 0 | 0 | 0 | 0 | 0 |
| Other | 3 | 0 | 0 | 1 | 3 |
| | | | | ***answered question*** | **48** |
| | | | | ***skipped question*** | **1** |

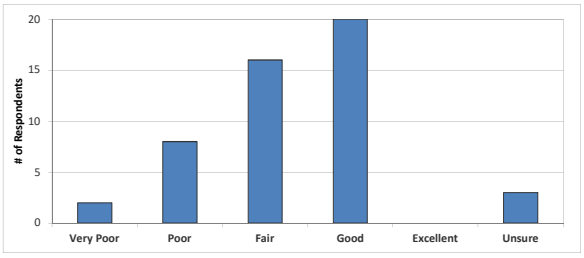
| Number | "Other" responses |
|---|---|
| 1 | I live here. Have nothing to do with why I live here. |
| 2 | weeds not cut early enough for people trying to enjoy their property on the lake. |
| 3 | None. I've given up on Horsehead. no fish. too weedy. |
| 4 | It's mid-way between Rhinelander & Minocqua |
| 5 | We enjoy all on lake activities |




***Horsehead Lake Current and Historic Condition, Health and Management***

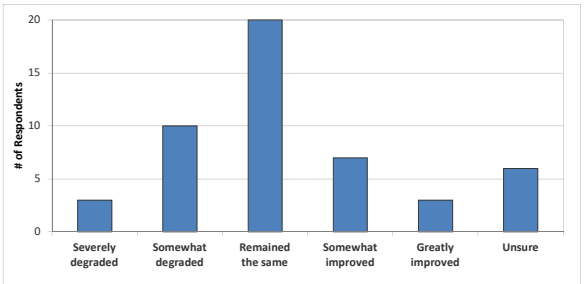
**18. How would you describe the overall current water quality of Horsehead Lake?**

| Answer Options | Very Poor | Poor | Fair | Good | Excellent | Unsure | Response Count |
|---|---|---|---|---|---|---|---|
| | 2 | 8 | 16 | 20 | 0 | 3 | 49 |
| | | | | | ***answered question*** | | **49** |
| | | | | | ***skipped question*** | | **0** |




**19. How has the overall water quality changed in Horsehead Lake since you first visited the lake?**

| Answer Options | Severely degraded | Somewhat degraded | Remained the same | Somewhat improved | Greatly improved | Unsure | Response Count |
|---|---|---|---|---|---|---|---|
| | 3 | 10 | 20 | 7 | 3 | 6 | 49 |
| | | | | | | ***answered question*** | **49** |
| | | | | | | ***skipped question*** | **0** |



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

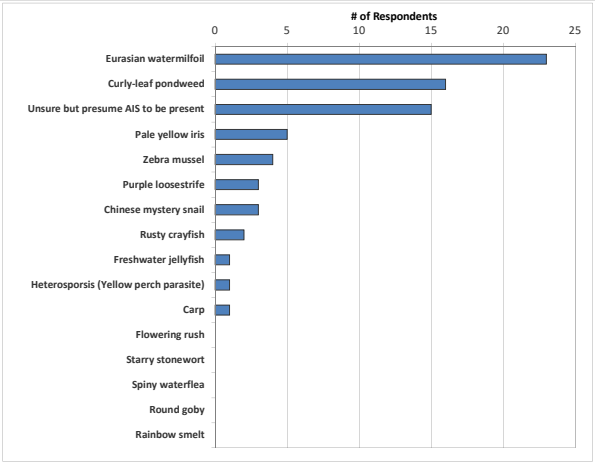
| Answer Options | Response Percent | Response Count |
|---|---|---|
| Yes | 100.0% | 48 |
| No | 0.0% | 0 |
| *answered question* | | 48 |
| *skipped question* | | 1 |

**21. Do you believe aquatic invasive species are present within Horsehead Lake?**

| Answer Options | Response Percent | Response Count |
|---|---|---|
| Yes | 41.7% | 20 |
| I think so but am not certain | 43.8% | 21 |
| No | 14.6% | 7 |
| *answered question* | | 48 |
| *skipped question* | | 1 |

**22. Which aquatic invasive species do you believe are in Horsehead Lake?**

| Answer Options | Response Percent | Response Count |
|---|---|---|
| Eurasian watermilfoil | 56.1% | 23 |
| Curly-leaf pondweed | 39.0% | 16 |
| Unsure but presume AIS to be present | 36.6% | 15 |
| Pale yellow iris | 12.2% | 5 |
| Zebra mussel | 9.8% | 4 |
| Purple loosestrife | 7.3% | 3 |
| Chinese mystery snail | 7.3% | 3 |
| Rusty crayfish | 4.9% | 2 |
| Freshwater jellyfish | 2.4% | 1 |
| Heterosporsis (Yellow perch parasite) | 2.4% | 1 |
| Carp | 2.4% | 1 |
| Flowering rush | 0.0% | 0 |
| Starry stonewort | 0.0% | 0 |
| Spiny waterflea | 0.0% | 0 |
| Round goby | 0.0% | 0 |
| Rainbow smelt | 0.0% | 0 |
| Other | 14.6% | 6 |
| *answered question* | | 41 |
| *skipped question* | | 8 |

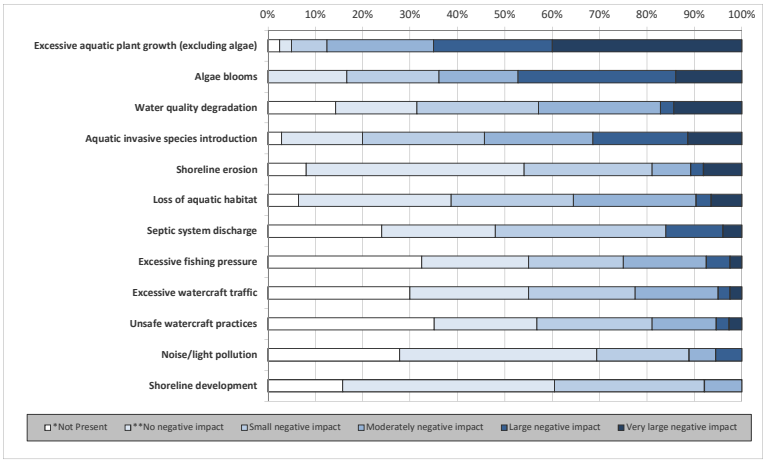



| Number | "Other" responses |
|---|---|
| 1 | Not sure |
| 2 | blue green algae is very bad |
| 3 | unsure |
| 4 | abundant lake grass summer of 2017 |
| 5 | the lake is so weedy that I'm not sure what AIS are present. I know that we have divers clear out boat launch and there are a few plants removed. excellent program |
| 6 | They have been well controlled but still might present to a small extent |

**23. To what level do you believe each of the following factors may currently be negatively impacting Horsehead Lake?**
*** Not Present means that you believe the issue does not exist on Horsehead Lake.**
**** No Impact means that the issue may exist on Horsehead Lake but it is not negatively impacting the lake.**

| Answer Options | *Not Present | **No negative impact | Small negative impact | Moderately negative impact | Large negative impact | Very large negative impact | Unsure: Need more information | Rating Average | Response Count |
|---|---|---|---|---|---|---|---|---|---|
| Excessive aquatic plant growth (excluding algae) | 1 | 1 | 3 | 9 | 10 | 16 | 5 | 2.56 | 45 |
| Algae blooms | 0 | 6 | 7 | 6 | 12 | 5 | 9 | 1.67 | 45 |
| Water quality degradation | 5 | 6 | 9 | 9 | 1 | 5 | 9 | 1.14 | 44 |
| Aquatic invasive species introduction | 1 | 6 | 9 | 8 | 7 | 4 | 9 | 1.41 | 44 |
| Shoreline erosion | 3 | 17 | 10 | 3 | 1 | 3 | 7 | 0.70 | 44 |
| Loss of aquatic habitat | 2 | 10 | 8 | 8 | 1 | 2 | 10 | 0.85 | 41 |
| Septic system discharge | 6 | 6 | 9 | 0 | 3 | 1 | 20 | 0.49 | 45 |
| Excessive fishing pressure | 13 | 9 | 8 | 7 | 2 | 1 | 4 | 0.73 | 44 |
| Excessive watercraft traffic | 12 | 10 | 9 | 7 | 1 | 1 | 4 | 0.68 | 44 |
| Unsafe watercraft practices | 13 | 8 | 9 | 5 | 1 | 1 | 6 | 0.60 | 43 |
| Noise/light pollution | 10 | 15 | 7 | 2 | 2 | 0 | 7 | 0.40 | 43 |
| Shoreline development | 6 | 17 | 12 | 3 | 0 | 0 | 5 | 0.42 | 43 |
| Other (please specify) | | | | | | | | | 5 |
| | | | | | | | | ***answered question*** | **46** |
| | | | | | | | | ***skipped question*** | **3** |

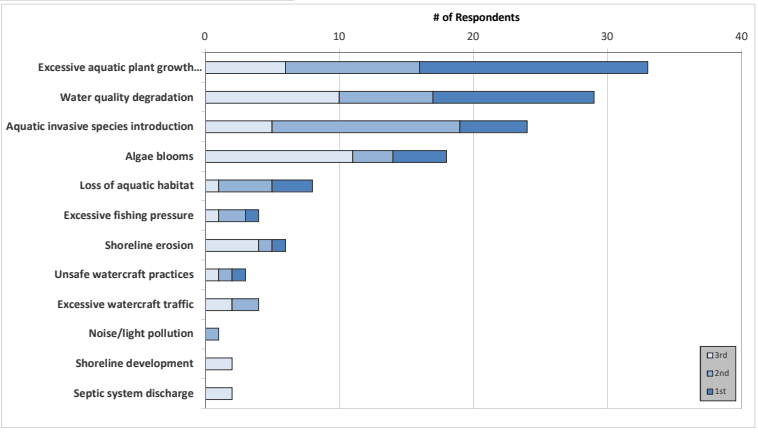
| Number | Other (please specify) |
|---|---|
| 1 | small minded people who want to control everything private land owners do and who think another study and/or rule program will solve issues. |
| 2 | very weedy / overgrowth of weeds |
| 3 | Thick Weed growth a round 4th of July following mild winters |
| 4 | Weeds/weed mowing |
| 5 | I don't live on the lake and don't use it |



**24. From the list below, please rank your top three concerns regarding Horsehead Lake, with 1 being your greatest concern.**

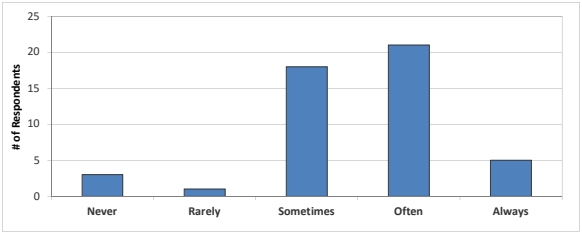
| Answer Options | 1st | 2nd | 3rd | Response Count |
|---|---|---|---|---|
| Excessive aquatic plant growth (excluding algae) | 17 | 10 | 6 | 33 |
| Water quality degradation | 12 | 7 | 10 | 29 |
| Aquatic invasive species introduction | 5 | 14 | 5 | 24 |
| Algae blooms | 4 | 3 | 11 | 18 |
| Loss of aquatic habitat | 3 | 4 | 1 | 8 |
| Excessive fishing pressure | 1 | 2 | 1 | 4 |
| Shoreline erosion | 1 | 1 | 4 | 6 |
| Unsafe watercraft practices | 1 | 1 | 1 | 3 |
| Excessive watercraft traffic | 0 | 2 | 2 | 4 |
| Noise/light pollution | 0 | 1 | 0 | 1 |
| Shoreline development | 0 | 0 | 2 | 2 |
| Septic system discharge | 0 | 0 | 2 | 2 |
| Other (please specify) | 3 | 0 | 0 | 3 |
| | | | *answered question* | 47 |
| | | | *skipped question* | 2 |

| Number | "Other" responses |
|---|---|
| 1 | weed cutting a waste of money |
| 2 | Decline in fish population |
| 3 | Weeds, weed mowing, weed debris |
| 4 | Major concern is growth of weeds and lack of control and fish population |
| 5 | Don't use lake - would like out of lake district |




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

| Answer Options | Never | Rarely | Sometimes | Often | Always | Response Count |
|---|---|---|---|---|---|---|
| | 3 | 1 | 18 | 21 | 5 | 48 |
| | | | | | *answered question* | 48 |
| | | | | | *skipped question* | 1 |

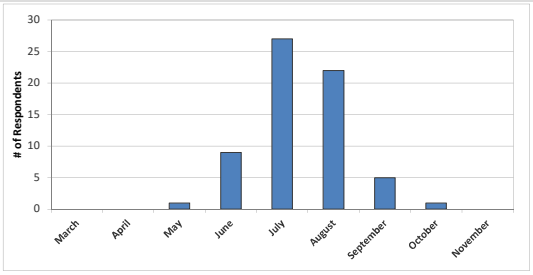



**26. During the past three years of open water season, has aquatic plant growth, including algae, ever displaced you from Horsehead Lake?**

| Answer Options | Response Percent | Response Count |
|---|---|---|
| Yes | 60.9% | 28 |
| No | 39.1% | 18 |
| *answered question* | | 46 |
| *skipped question* | | 3 |

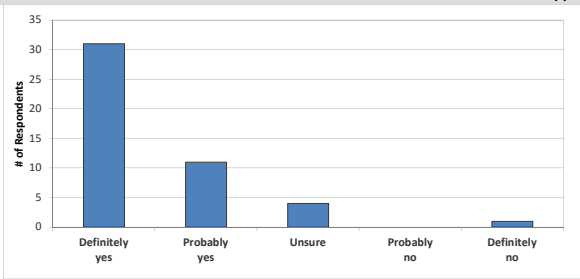
**27. In which months have you been displaced from Horsehead Lake due to aquatic plant growth?**

| Answer Options | Response Percent | Response Count |
|---|---|---|
| March | 0.0% | 0 |
| April | 0.0% | 0 |
| May | 3.7% | 1 |
| June | 33.3% | 9 |
| July | 100.0% | 27 |
| August | 81.5% | 22 |
| September | 18.5% | 5 |
| October | 3.7% | 1 |
| November | 0.0% | 0 |
| *answered question* | | 27 |
| *skipped question* | | 22 |



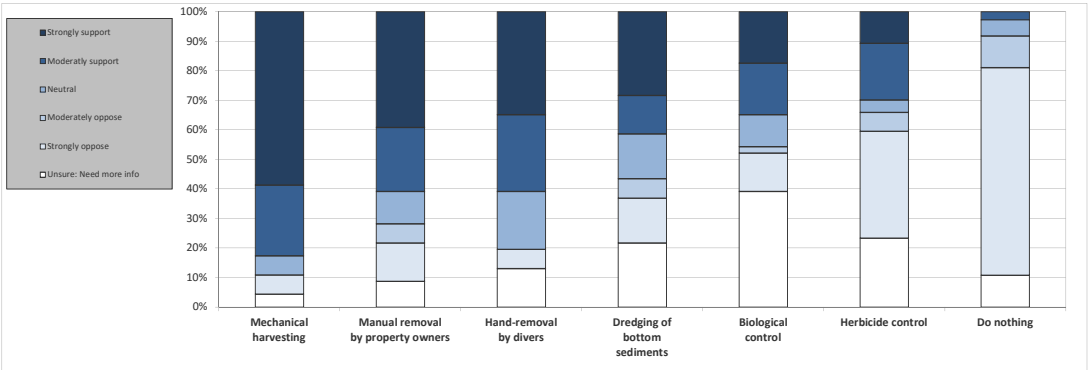

**28. Considering your answer to the question above, do you believe aquatic plant control is needed on Horsehead Lake?**

| Answer Options | Definitely yes | Probably yes | Unsure | Probably no | Definitely no | Response Count |
|---|---|---|---|---|---|---|
| | 31 | 11 | 4 | 0 | 1 | 47 |
| *answered question* | | | | | | 47 |
| *skipped question* | | | | | | 2 |




**29. Aquatic plants can be managed using many techniques. What is your level of support for the responsible use of the following techniques on Horsehead Lake?**

| Answer Options | Strongly oppose | Moderately oppose | Neutral | Moderatly support | Strongly support | Unsure: Need more info | Rating Average | Response Count |
|---|---|---|---|---|---|---|---|---|
| Mechanical harvesting | 3 | 0 | 3 | 11 | 27 | 2 | 4.15 | 46 |
| Manual removal by property owners | 6 | 3 | 5 | 10 | 18 | 4 | 3.41 | 46 |
| Hand-removal by divers | 3 | 0 | 9 | 12 | 16 | 6 | 3.43 | 46 |
| Dredging of bottom sediments | 7 | 3 | 7 | 6 | 13 | 10 | 2.67 | 46 |
| Biological control (milfoil weevil, loosestrife beetle, etc) | 6 | 1 | 5 | 8 | 8 | 18 | 2.07 | 46 |
| Herbicide (chemical) control | 17 | 3 | 2 | 9 | 5 | 11 | 1.91 | 47 |
| Do nothing (do not manage plants) | 26 | 4 | 2 | 1 | 0 | 4 | 1.19 | 37 |
| *answered question* | | | | | | | | 47 |
| *skipped question* | | | | | | | | 2 |




**30. How do you feel about the past use of mechanical harvesting to control nuisance aquatic plants in previous years?**

| Answer Options | Completely support | Moderately support | Unsure | Moderately oppose | Completely oppose | Unaware of past harvesting | Rating Average | Response Count |
|---|---|---|---|---|---|---|---|---|
| | 26 | 13 | 4 | 1 | 2 | 2 | 1.63 | 48 |
| *answered question* | | | | | | | | 48 |
| *skipped question* | | | | | | | | 1 |

**31. What is your level of support or opposition for future use of mechanical harvesting to control nuisance aquatic plants in Horsehead Lake?**

| Answer Options | Completely support | Moderately support | Unsure | Moderately oppose | Completely oppose | Rating Average | Response Count |
|---|---|---|---|---|---|---|---|
| | 28 | 14 | 3 | 1 | 2 | 1.65 | 48 |
| | | | | | *answered question* | | 48 |
| | | | | | *skipped question* | | 1 |

**32. What is the reason(s) you oppose future mechanical harvesting to target nuisance aquatic plants in Horsehead Lake?**

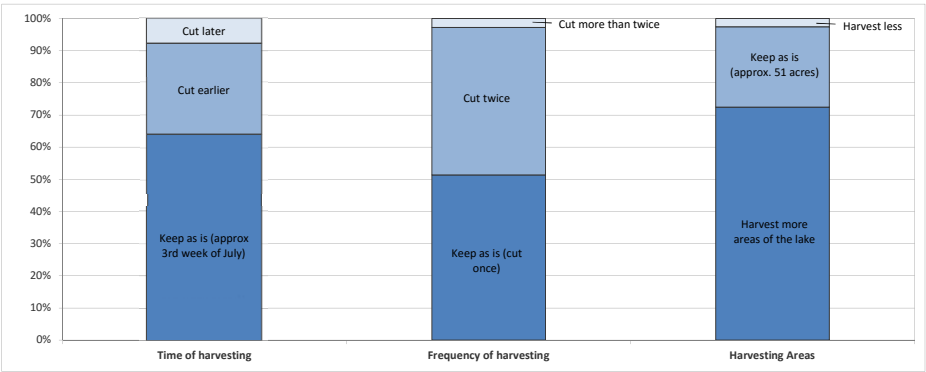
| Answer Options | Response Percent | Response Count |
|---|---|---|
| Ineffectiveness of harvesting | 100.0% | 3 |
| Potential cost of harvesting is too high | 66.7% | 2 |
| Aesthetics after harvesting (leftover fragments of cut plants) | 66.7% | 2 |
| Potential impacts to native (non-plant) species such as fish, insects, etc. | 33.3% | 1 |
| Potential impacts to native aquatic plant species | 0.0% | 0 |
| Future effects may be unknown at this time | 0.0% | 0 |
| Another reason | 100.0% | 3 |
| *answered question* | | 3 |
| *skipped question* | | 46 |

| Number | "Other" responses |
|---|---|
| 1 | The lake has always been full of weeds and always will be. Has never hurt the fishing. The lake has always come back after freeze out and before creation of weed cutting. |
| 2 | increased cost on our taxes with seeing no change on the lake |
| 3 | Weed debris negatively affects shoreline and use of the lake. Any harvesting should include plans to remove weed debris as well. |

**33. How would you change, if at all, the mechanical harvesting plan?**

| Answer Options | Response Percent | Response Count |
|---|---|---|
| I do not support mechanical harvesting | 100.0% | 2 |

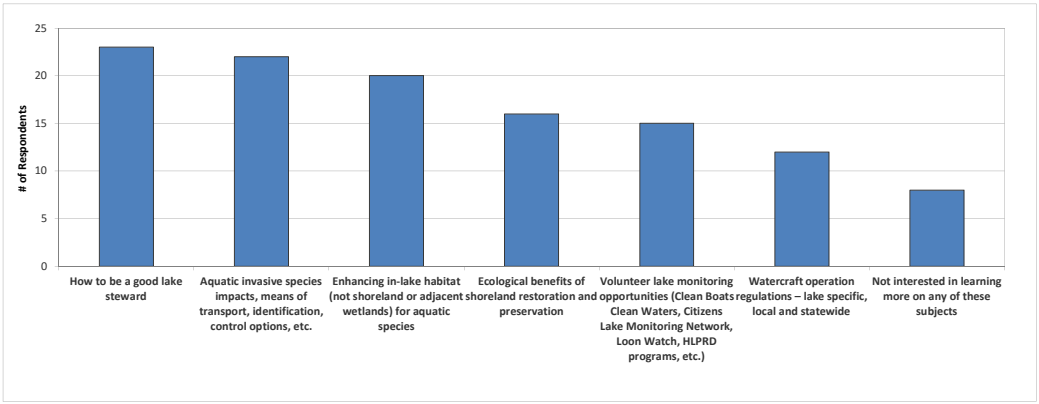
| Time of Harvesting Answer Options | Response Percent | Response Count | Frequency of Harvesting Answer Options | Response Percent | Response Count | Harvesting Areas Answer Options | Response Percent | Response Count |
|---|---|---|---|---|---|---|---|---|
| Keep as is (approximately 3rd week of July) | 64.1% | 25 | Keep as is (cut once) | 51.4% | 19 | Harvest more areas of the lake | 72.5% | 29 |
| Cut earlier | 28.2% | 11 | Cut twice | 46.0% | 17 | Keep as is (approx. 51 acres) | 25.0% | 10 |
| Cut later | 7.7% | 3 | Cut more than twice | 2.7% | 1 | Harvest less areas of the lake | 2.5% | 1 |
| *answered question* | | 43 | *answered question* | | 43 | answered question | | 43 |
| *skipped question* | | 6 | *skipped question* | | 6 | skipped question | | 6 |



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

| Answer Options | Response Percent | Response Count |
|---|---|---|
| How to be a good lake steward | 51.1% | 23 |
| Aquatic invasive species impacts, means of transport, identification, control options, etc. | 48.9% | 22 |
| Enhancing in-lake habitat (not shoreland or adjacent wetlands) for aquatic species | 44.4% | 20 |
| Ecological benefits of shoreland restoration and preservation | 35.6% | 16 |
| Volunteer lake monitoring opportunities (Clean Boats Clean Waters, Citizens Lake Monitoring Network, Loon Watch, HLPRD programs, etc.) | 33.3% | 15 |
| Watercraft operation regulations – lake specific, local and statewide | 26.7% | 12 |
| Not interested in learning more on any of these subjects | 17.8% | 8 |
| Some other topic | 6.7% | 3 |
| | *answered question* | 45 |
| | *skipped question* | 4 |

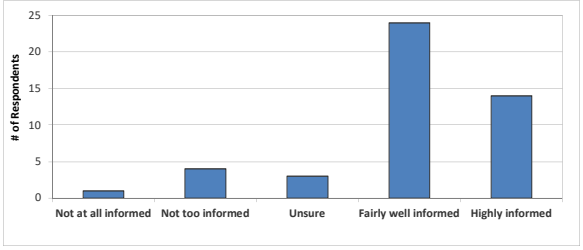
| Number | Other (please specify) |
|---|---|
| 1 | rye bails and other methods of control the DNR never talk about |
| 2 | I feel I'm fairly well up to speed on these subjects |
| 3 | I would like to know how to get out of the lake district |




***Horsehead Lake Protection & Rehabilitation District No. 1 (HLPRD)***

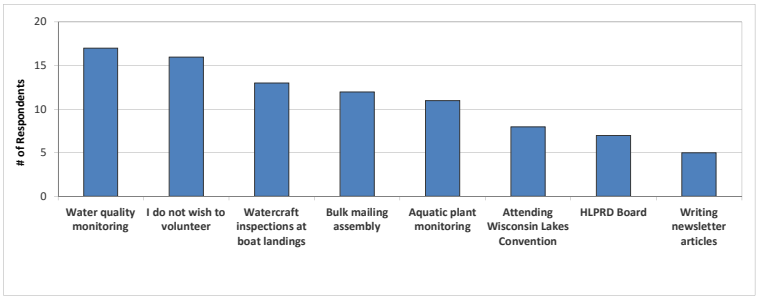
**35. How informed has the HLPRD kept you regarding issues with Horsehead Lake and its management?**

| Answer Options | Not at all informed | Not too informed | Unsure | Fairly well informed | Highly informed | Response Count |
|---|---|---|---|---|---|---|
| | 1 | 4 | 3 | 24 | 14 | 46 |
| | | | | *answered question* | | 46 |
| | | | | *skipped question* | | 3 |




**36. The effective management of your lake will require the cooperative efforts of numerous volunteers. Please select the activities you would be willing to participate in if the HLPRD requires additional assistance.**

| Answer Options | Response Percent | Response Count |
|---|---|---|
| Water quality monitoring | 37.0% | 17 |
| I do not wish to volunteer | 34.8% | 16 |
| Watercraft inspections at boat landings | 28.3% | 13 |
| Bulk mailing assembly | 26.1% | 12 |
| Aquatic plant monitoring | 23.9% | 11 |
| Attending Wisconsin Lakes Convention | 17.4% | 8 |
| HLPRD Board | 15.2% | 7 |
| Writing newsletter articles | 10.9% | 5 |
| *answered question* | | 46 |
| *skipped question* | | 3 |

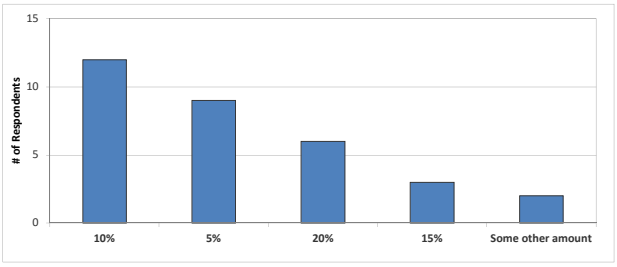


**37. Would you support raising your district tax to fund further fish stocking of Horsehead Lake?**

| Answer Options | Response Percent | Response Count |
|---|---|---|
| Yes | 69.6% | 32 |
| No | 30.4% | 14 |
| *answered question* | | 46 |
| *skipped question* | | 3 |

**38. By what percent would you be willing to increase your district tax?**

| Answer Options | Response Percent | Response Count |
|---|---|---|
| 10% | 37.5% | 12 |
| 5% | 28.1% | 9 |
| 20% | 18.8% | 6 |
| 15% | 9.4% | 3 |
| Some other amount | 6.3% | 2 |
| *answered question* | | 32 |
| *skipped question* | | 17 |




| Number | Other (please specify) |
|---|---|
| 1 | 2 |
| 2 | 50% |

**39. Please feel free to provide written comments concerning Horsehead Lake, its current and/or historic condition and its management.**

| Answer Options | Response Count |
|---|---|
| | 27 |
| *answered question* | 27 |
| *skipped question* | 22 |

| Number | Response Text |
|---|---|
| 1 | We've come a long way from mold growing on top of the lake in August to now. Keep up the good work and do more harvesting. |
| 2 | I have lived here 40+ years. The lake has always had weeds and algae. It's a good fertile fish producing lake. It has always been a freeze out lake and always came back on its own. Aeration may help a little in moderate winters but obviously didn't do much 2013-2014 or this year, 2017-2018. Stocking bass is not the answer. It's always been northern and bluegill. Some people seem to want it to be a bass lake. Let it be! People that live on the lake want to make it something it's not. It's a fishing lake, not jet ski, water ski or swimming. Aeration, weed cutting, stocking bass will never change the lake into something it's not. |
| 3 | Current and historic conditions are some what the same, our management are very good |
| 4 | Our hope is that it can be restored as a good pan fish fishery. Very Concerned about the current lack of fish, especially gills and crappies. |
| 5 | We are generally very happy with the district's management of the lake. We prioritize the health of the lake and it's species over watercraft recreation on the lake. In fact, we feel that the jet skis on the lake are typically very unsafe and do not follow safety regulations. They drive too close to shorelines and to other objects in the water. Plus, they create noise pollution. Maybe the resorts/landowners could use an article on these regulations in the next newsletter. Thanks! |
| 6 | I recently purchased this property but ownership info apparently has not changed for **Removed**<br>New owner is Tom **Removed**<br>**REMOVED**<br>thanks |
| 7 | Do not want to see the lake used for reasons of personal profit . . . shut the campground down. Raise water level back-up and leave it there year-round. Restock the fish. I am not aware of failing septic systems on the lake and was surprised by the questions. If there are systems not currently monitored by the county, the county needs to step in and enforce compliance. |
| 8 | Dam should be replaced with a flow under dam instead of a flow over dam. Lake should have deep holes dredged and islands created with the dredged material. |
| 9 | Need to harvest weeds on the North end of the lake more than in the past years. |
| 10 | B+ The current board cares about the well being of Horsehead Lake. Are doing a great job. Could be a little more open minded when listening to concerns of stakeholders at meetings. Everyone should feel comfortable offering suggestions to improve the health and use of the Lake |
| 11 | I appreciate the volunteers who give their time to continue to mak HL a place Tao be proud of |
| 12 | I know it's a sore subject but the old way of lowering the lake that allowed res. to clear lakefront in front of property. That was the purpose of the type of dam that was installed. It also avoided lake shoreline erosion. |
| 13 | I am not a lakeshore owner but live in the district. If I am going to trailer my boat to a local lake it would not be Horsehead Lake due to the availability of other pristine lakes in the close vicinity. |
| 14 | I appreciate everything that the association and volunteers do for our lake. I strongly believe that the lake harvesting has been a huge benefit to the health of our lake and that the most optimum time to harvest is when the plants reach maturity. I truly believe that only the people that have homes/property and pay property taxes have a right to make decisions about our lake. |
| 15 | I would like to see less weeds on the lake in the summer months. I know part of the problem is the shallow depth of the lake. I'm not sure what reasonable actions are needed to make this happen. Maybe by cutting the weeds earlier it will make boating/fishing easier during the months we use the lake the most. |
| 16 | our comittment to better manage our mechanical harvesting of the aquatic plants in a timely manner falls short of providing property owners highest and best use of the lake they have invested in for their use. completing the cutting of the weeds before the fourth of july clears the lake for the remainder of the summer and provides quality recreational opportunities. |
| 17 | Weed control of entire lake -- either mechanical or biologic (if proven safe). Mid Lake has their own equipment & then even harvest the weeds that homeowners collect at the shoreline. For the money we are paying, the weed harvester should be willing to pick up the weeds we've collected. |
| 18 | Since Horsehead Lake is a shallow lake, it is what it is and property owners have been able to sustain it so it has not deteriorated to much. Every year is different. Some better than others. Overall it is a nice lake. |
| 19 | The current board is doing a great job. |
| 20 | The lake and its management have improved greatly since we began coming here. There are many more ways to be informed about what is happening - for example the web page. After the "bad" winter several years ago he fish are coming back due to smart stocking and the aquatic plants are also returning. Harvesting once per season in mid-July seems to be the best way to balance people's need to fish and boat. Pulling plants around your pier to keep your swimming area open works well too. It is a lake not a swimming pool. |
| 21 | We are fortunate to have such a wonderful lake and organization to maintain and enhance it! |
| 22 | I do not think we should spend funds on fish stocking as it doesn't appear to add any real benefit to living on the lake. In addition, too many non-residents benefit disproportionately by this (they don't pay for stocking yet they get to fish). My other comments has to do w/the excessive weed debris generated by the lake mowing. Candidly, our shore line and the way we use the lake ends whenever we mow the lake (usually mid July due to the excessive weed debris. We haven't had our boat in the lake in over 13 years, just not worth the limited use we get. We've been good supporters of the lake mowing, but really thing it'd be fair to include removal of the weed debris. Maybe we could construct a matrix based on lake use. Tax funds from those who fish and boat on the lake would pay the mowing and tax funds from those who don't would be directed to pay for the removal of the weeds. |
| 23 | We've considered moving to a more clearer lake due to last years poor weed control and lack of effective management. |

| | |
|---|---|
| **24** | The fishing was great 2017 thru Jan 2018/ it is my belief we have had another "significant fish kill".<br>More aeration needs to be setup either in the current location or others on the north end of the lake/ to help with keeping oxygen levels up during heavy ice / snow years. |
| **25** | We life off-water and do not use the lake. I think it is unfair that we have to pay lake district assessment for something we don't use. |
| **26** | Last year after weed harvesting, left the lake a big mess. People could not believe how bad our lake looked. |
| **27** | We like this lake a lot. We would like to see more perch and crappies but no walleyes. We would also prefer to keep the boat traffic down. |

# C

# APPENDIX C

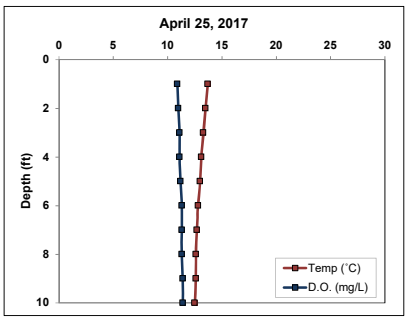
## Water Quality Data

**Horsehead Lake**

**Date:** 4/25/2017
**Time:** 15:40
**Weather:** 100% clouds, 10 mph wind, 65F
**Entry:** EEH

**Max Depth:** 10.4
**HHDS Depth (ft):** 3.0
**HHDB Depth (ft):** 8.0
**Secchi Depth (ft):** 6.1

| Depth (ft) | Temp (˚C) | D.O. (mg/L) | % Saturation | pH | Sp. Cond. (µS/cm) |
|---|---|---|---|---|---|
| 1 | 13.7 | 10.9 | 105% | | |
| 2 | 13.5 | 11.0 | 106% | | |
| 3 | 13.3 | 11.1 | 106% | | |
| 4 | 13.1 | 11.1 | 106% | | |
| 5 | 13.0 | 11.2 | 107% | | |
| 6 | 12.8 | 11.3 | 107% | | |
| 7 | 12.7 | 11.3 | 107% | | |
| 8 | 12.6 | 11.3 | 107% | | |
| 9 | 12.6 | 11.4 | 108% | | |
| 10 | 12.5 | 11.4 | 107% | | |




| Parameter | HHDS | HHDB |
|---|---|---|
| Total P (µg/L) | 22.10 | 21.70 |
| Dissolved P (µg/L) | 2.10 | ND |
| Chl-a (µg/L) | ND | 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) | 402.00 | 362.00 |
| Lab Cond. (µS/cm) | 107.00 | 107.00 |
| Lab pH | 7.72 | 7.76 |
| Alkalinity (mg/L $CaCO_3$) | 40.00 | 39.50 |
| Total Susp. Solids (mg/L) | 2.00 | ND |
| Calcium (mg/L) | 11.20 | NA |
| Magnesium (mg/L) | 4.03 | NA |
| Hardness (mg/L) | 44.70 | NA |
| Color (SU) | 10.00 | NA |
| Turbidity (NTU) | NA | NA |

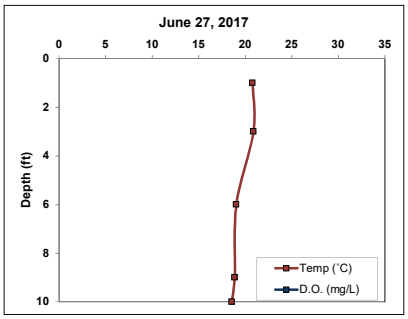
Data collected by JMB (Onterra).

**Horsehead Lake**

**Date:** 6/27/2017
**Time:**
**Weather:**
**Entry:** EEH

**Max Depth:**
**HHDS Depth (ft):**
**HHDB Depth (ft):**
**Secchi Depth (ft):** hit bottom

| Depth (ft) | Temp (˚C) | D.O. (mg/L) | % Saturation | pH | Sp. Cond. (µS/cm) |
|---|---|---|---|---|---|
| 1 | 20.8 | | | | |
| 3 | 20.9 | | | | |
| 6 | 19.1 | | | | |
| 9 | 18.9 | | | | |
| 10 | 18.6 | | | | |




| Parameter | HHDS | HHDB |
|---|---|---|
| Total P (µg/L) | 41.30 | NA |
| Dissolved P (µg/L) | NA | NA |
| Chl-a (µg/L) | 12.50 | 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) | 536.00 | NA |
| Lab Cond. (µS/cm) | NA | NA |
| Lab pH | NA | NA |
| Alkalinity (mg/L $CaCO_3$) | NA | NA |
| Total Susp. Solids (mg/L) | NA | NA |
| Calcium (mg/L) | NA | NA |
| Magnesium (mg/L) | NA | NA |
| Hardness (mg/L) | NA | NA |
| Color (SU) | NA | NA |
| Turbidity (NTU) | NA | NA |

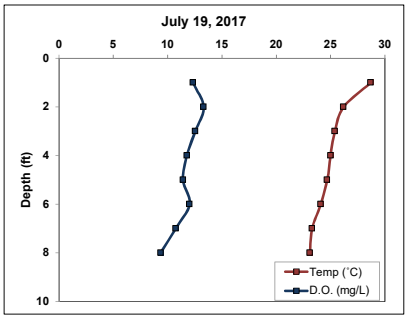
Data collected by Hallie Moline (CLMN volunteer).

**Horsehead Lake**

**Date:** 7/19/2017
**Time:** 14:20
**Weather:** 100% sun, 85F
**Entry:** JMB

**Max Depth:** 9.0
**HHDS Depth (ft):** 3.0
**HHDB Depth (ft):** 7.0
**Secchi Depth (ft):** 3.7

| Depth (ft) | Temp (˚C) | D.O. (mg/L) | % Saturation | pH | Sp. Cond. (µS/cm) |
|---|---|---|---|---|---|
| 1 | 28.7 | 12.3 | 160% | | |
| 2 | 26.2 | 13.3 | 164% | | |
| 3 | 25.4 | 12.6 | 153% | 9.7 | |
| 4 | 25.0 | 11.8 | 142% | | |
| 5 | 24.7 | 11.4 | 138% | | |
| 6 | 24.1 | 12.0 | 143% | | |
| 7 | 23.3 | 10.7 | 126% | 9.6 | |
| 8 | 23.1 | 9.4 | 109% | | |




| Parameter | HHDS | HHDB |
|---|---|---|
| Total P (µg/L) | 37.40 | 28.40 |
| Dissolved P (µg/L) | NA | NA |
| Chl-a (µg/L) | 13.10 | 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) | 845.00 | NA |
| Lab Cond. (µS/cm) | 105.00 | 98.00 |
| Lab pH | 10.30 | 9.96 |
| Alkalinity (mg/L $CaCO_3$) | 35.60 | 36.30 |
| Total Susp. Solids (mg/L) | NA | NA |
| Calcium (mg/L) | NA | NA |
| Magnesium (mg/L) | NA | NA |
| Hardness (mg/L) | NA | NA |
| Color (SU) | 15.00 | NA |
| Turbidity (NTU) | NA | NA |

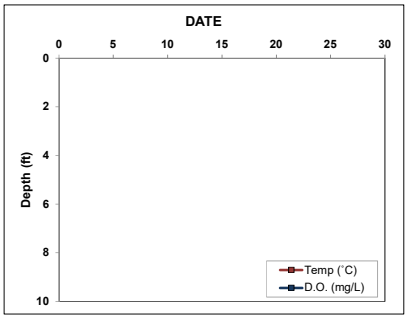
Data collected by EJH & CJF (Onterra).

**Horsehead Lake**

**Date:** 8/2/2017
**Time:**
**Weather:**
**Entry:** EEH

**Max Depth:**
**HHDS Depth (ft):**
**HHDB Depth (ft):**
**Secchi Depth (ft):**

| Depth (ft) | Temp (˚C) | D.O. (mg/L) | % Saturation | pH | Sp. Cond. (µS/cm) |
|---|---|---|---|---|---|




| Parameter | HHDS | HHDB |
|---|---|---|
| Total P (µg/L) | 22.10 | NA |
| Dissolved P (µg/L) | NA | NA |
| Chl-a (µg/L) | 8.01 | 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) | 655.00 | NA |
| Lab Cond. (µS/cm) | NA | NA |
| Lab pH | NA | NA |
| Alkalinity (mg/L $CaCO_3$) | NA | NA |
| Total Susp. Solids (mg/L) | NA | NA |
| Calcium (mg/L) | NA | NA |
| Magnesium (mg/L) | NA | NA |
| Hardness (mg/L) | NA | NA |
| Color (SU) | NA | NA |
| Turbidity (NTU) | NA | NA |

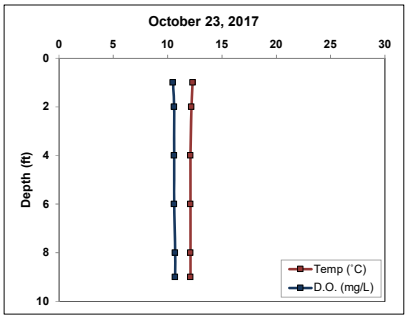
Data collected by Hallie Moline (CLMN volunteer).

**Horsehead Lake**

**Date:** 10/23/2017
**Time:** 15:15
**Weather:** 50F, 80% clouds, light breeze
**Entry:** EEH

**Max Depth:** 10.0
**HHDS Depth (ft):** 2.0
**HHDB Depth (ft):** 8.0
**Secchi Depth (ft):** hit bottom

| Depth (ft) | Temp (˚C) | D.O. (mg/L) | % Saturation | pH | Sp. Cond. (µS/cm) |
|---|---|---|---|---|---|
| 1 | 12.3 | 10.5 | 98% | | |
| 2 | 12.2 | 10.6 | 99% | | |
| 4 | 12.1 | 10.6 | 98% | | |
| 6 | 12.1 | 10.6 | 98% | | |
| 8 | 12.1 | 10.7 | 99% | | |
| 9 | 12.1 | 10.7 | 99% | | |




| Parameter | HHDS | HHDB |
|---|---|---|
| Total P (µg/L) | 25.00 | 20.30 |
| Dissolved P (µg/L) | NA | NA |
| Chl-a (µg/L) | 7.51 | 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 |

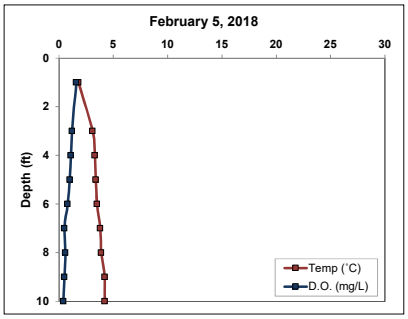
Data collected by TAH & PJG (Onterra).

**Horsehead Lake**

**Date:** 2/5/2018
**Time:** 3:44
**Weather:** 50% clouds, 4F
**Entry:** EEH

**Max Depth:** 10.5
**HHDS Depth (ft):** 3.0
**HHDB Depth (ft):** 7.0
**Secchi Depth (ft):** 5.0

| Depth (ft) | Temp (˚C) | D.O. (mg/L) | % Saturation | pH | Sp. Cond. (µS/cm) |
|---|---|---|---|---|---|
| 1 | 1.8 | 1.6 | 12% | | |
| 3 | 3.1 | 1.2 | 9% | | |
| 4 | 3.3 | 1.1 | 8% | | |
| 5 | 3.4 | 1.0 | 8% | | |
| 6 | 3.5 | 0.8 | 6% | | |
| 7 | 3.8 | 0.5 | 4% | | |
| 8 | 3.9 | 0.6 | 5% | | |
| 9 | 4.2 | 0.5 | 4% | | |
| 10 | 4.2 | 0.4 | 3% | | |




| Parameter | HHDS | HHDB |
|---|---|---|
| Total P (µg/L) | 28.60 | 37.00 |
| Dissolved P (µg/L) | 2.50 | 2.10 |
| Chl-a (µg/L) | NA | 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) | 779.00 | 797.00 |
| 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 JMB (Onterra). Ice thickness = 1.8 ft

**Water Quality Data**

| 2017-2018 | Surface | | Bottom | |
|---|---|---|---|---|
| Parameter | Count | Mean | Count | Mean |
| Secchi Depth (feet) | 3 | 4.9 | NA | NA |
| Total P (µg/L) | 6 | 29.4 | 4 | 26.9 |
| Dissolved P (µg/L) | 2 | 2.3 | 2 | 2.1 |
| Chl a (µg/L) | 5 | 10.3 | 0 | NA |
| TKN (µg/L | 0 | NA | 0 | NA |
| $NO_3$+$NO_2$-N (µg/L) | 0 | NA | 0 | NA |
| $NH_3$-N (µg/L) | 0 | NA | 0 | NA |
| Total N (µg/L) | 5 | 643.4 | 2 | 579.5 |
| Lab Cond. (µS/cm) | 2 | 106.0 | 2 | 102.5 |
| Alkal (mg/l $CaCO_3$) | 2 | 37.8 | 2 | 37.9 |
| Total Susp. Solids (mg/l) | 2 | 2.0 | 2 | ND |
| Calcium (mg/L) | 1 | 11.2 | 0 | NA |
| Magnesium (mg/L) | 1 | 4.0 | 0 | NA |
| Hardness (mg/L) | 1 | 44.7 | 0 | NA |
| Color (SU) | 2 | 12.5 | 0 | NA |
| Turbidity (NTU) | 0 | NA | 0 | NA |

**Trophic State Index (TSI)**

| Year | TP | Chl-a | Secchi |
|---|---|---|---|
| 1973 | | | 103.2 |
| 1974 | | | 74.5 |
| 1979 | | | |
| 1988 | | | 55.9 |
| 1989 | | | |
| 1990 | | | 67.7 |
| 1991 | | | |
| 1992 | | | 59.8 |
| 1993 | | | 55.7 |
| 1994 | | | 56.3 |
| 1995 | | | 50.4 |
| 1996 | | | 44.7 |
| 1997 | | | 50.1 |
| 1998 | | | |
| 1999 | | | 51.9 |
| 2000 | | | 49.5 |
| 2001 | 55.4 | 62.6 | 54.3 |
| 2002 | 61.8 | 59.5 | 55.9 |
| 2003 | 56.2 | 55.8 | 52.1 |
| 2004 | 50.8 | 50.6 | 50.0 |
| 2005 | 52.9 | 56.4 | 52.2 |
| 2006 | 56.3 | 57.3 | 54.7 |
| 2007 | 54.6 | 53.4 | 55.4 |
| 2008 | 56.3 | 51.0 | 49.6 |
| 2009 | 59.8 | 58.2 | 51.3 |
| 2010 | 53.5 | 49.7 | 45.9 |
| 2011 | 54.6 | 52.7 | 53.0 |
| 2012 | 50.4 | 51.8 | 48.3 |
| 2013 | 57.6 | 60.0 | 50.8 |
| 2014 | 57.9 | 54.4 | 47.2 |
| 2015 | 64.8 | 57.7 | 54.9 |
| 2016 | 60.0 | 55.0 | 57.1 |
| 2017 | 57.7 | 54.1 | 54.4 |
| **All Years (Weighted)** | 57.0 | 55.6 | 52.5 |
| **SHDL Median** | 52.7 | 50.4 | 52.4 |
| **NLF Ecoregion Median** | 48.1 | 47.5 | 45.7 |

| | Secchi (feet) | | | | Chlorophyll-*a* (µg/L) | | | | Total Phosphorus (µg/L) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Growing Season | | Summer | | Growing Season | | Summer | | Growing Season | | Summer | |
| Year | Count | Mean | Count | Mean | Count | Mean | Count | Mean | Count | Mean | Count | Mean |
| 1973 | 4 | 0.9 | 1 | 0.2 | | | | | | | | |
| 1974 | 2 | 2.1 | 1 | 1.2 | | | | | | | | |
| 1979 | 1 | 6.8 | 0 | | | | | | | | | |
| 1988 | 9 | 4.5 | 7 | 4.4 | | | | | | | | |
| 1989 | 0 | | 0 | | | | | | | | | |
| 1990 | 4 | 3.3 | 3 | 1.9 | | | | | | | | |
| 1991 | 0 | | 0 | | | | | | | | | |
| 1992 | 5 | 3.4 | 3 | 3.3 | | | | | | | | |
| 1993 | 4 | 3.9 | 3 | 4.4 | | | | | | | | |
| 1994 | 4 | 5.4 | 2 | 4.2 | | | | | | | | |
| 1995 | 3 | 7.1 | 2 | 6.4 | | | | | | | | |
| 1996 | 5 | 6.5 | 2 | 9.5 | | | | | | | | |
| 1997 | 2 | 6.5 | 2 | 6.5 | | | | | | | | |
| 1998 | 0 | | 0 | | | | | | | | | |
| 1999 | 7 | 5.5 | 6 | 5.8 | | | | | | | | |
| 2000 | 11 | 7.2 | 8 | 6.8 | 1 | 2.0 | 0 | | 1 | 20.0 | 0.0 | |
| 2001 | 6 | 5.4 | 2 | 4.9 | 2 | 15.5 | 1 | 26.0 | 2 | 32.5 | 1.0 | 35.0 |
| 2002 | 9 | 4.3 | 6 | 4.4 | 4 | 23.8 | 3 | 19.0 | 5 | 50.0 | 3.0 | 54.7 |
| 2003 | 6 | 5.2 | 3 | 5.7 | 2 | 13.0 | 2 | 13.0 | 2 | 37.0 | 2.0 | 37.0 |
| 2004 | 4 | 7.2 | 3 | 6.6 | 4 | 6.5 | 3 | 7.7 | 4 | 24.3 | 3.0 | 25.3 |
| 2005 | 2 | 5.6 | 2 | 5.6 | 3 | 13.9 | 3 | 13.9 | 3 | 29.3 | 3.0 | 29.3 |
| 2006 | 2 | 4.8 | 2 | 4.8 | 3 | 15.2 | 3 | 15.2 | 3 | 37.3 | 3.0 | 37.3 |
| 2007 | 1 | 4.5 | 1 | 4.5 | 3 | 10.2 | 3 | 10.2 | 3 | 33.0 | 3.0 | 33.0 |
| 2008 | 3 | 6.7 | 3 | 6.7 | 3 | 8.0 | 3 | 8.0 | 3 | 37.3 | 3.0 | 37.3 |
| 2009 | 2 | 6.0 | 2 | 6.0 | 2 | 16.8 | 2 | 16.8 | 2 | 47.5 | 2.0 | 47.5 |
| 2010 | 3 | 8.8 | 3 | 8.8 | 3 | 7.0 | 3 | 7.0 | 3 | 30.7 | 3.0 | 30.7 |
| 2011 | 3 | 5.3 | 3 | 5.3 | 1 | 9.5 | 1 | 9.5 | 1 | 33.0 | 1.0 | 33.0 |
| 2012 | 5 | 7.4 | 5 | 7.4 | 3 | 8.7 | 3 | 8.7 | 3 | 24.7 | 3.0 | 24.7 |
| 2013 | 6 | 6.0 | 5 | 6.2 | 3 | 20.1 | 3 | 20.1 | 4 | 35.2 | 3.0 | 40.7 |
| 2014 | 3 | 6.2 | 2 | 8.0 | 3 | 11.4 | 3 | 11.4 | 4 | 49.5 | 3.0 | 41.6 |
| 2015 | 4 | 5.0 | 3 | 4.7 | 3 | 15.9 | 3 | 15.9 | 4 | 58.6 | 3.0 | 67.1 |
| 2016 | 1 | 4.0 | 1 | 4.0 | 1 | 12.0 | 1 | 12.0 | 1 | 48.0 | 1.0 | 48.0 |
| 2017 | 3 | 5.3 | 2 | 4.9 | 5 | 10.3 | 4 | 11.0 | 7 | 33.4 | 4.0 | 41.1 |
| **All Years (Weighted)** | | 5.4 | | 5.5 | | 12.6 | | 12.8 | | 37.6 | | 39.0 |
| **SHDL Median** | | | | 5.6 | | | | 7.5 | | | | 29.0 |
| **NLF Ecoregion Median** | | | | 8.9 | | | | 5.6 | | | | 21.0 |

# D

# APPENDIX D

## Watershed Analysis WiLMS Results

**Date: 4/26/2018 Scenario: Horsehead Lake Watershed Current**

Lake Id: Horsehead Lake
Watershed Id: 0

**Hydrologic and Morphometric Data**

Tributary Drainage Area: 636.0 acre
Total Unit Runoff: 12.20 in.
Annual Runoff Volume: 646.6 acre-ft
Lake Surface Area <As>: 386.0 acre
Lake Volume <V>: 2746.0 acre-ft
Lake Mean Depth <z>: 7.1 ft
Precipitation - Evaporation: 5.8 in.
Hydraulic Loading: 833.2 acre-ft/year
Areal Water Load <qs>: 2.2 ft/year
Lake Flushing Rate <p>: 0.30 1/year
Water Residence Time: 3.30 year
Observed spring overturn total phosphorus (SPO): 34.5 mg/m^3
Observed growing season mean phosphorus (GSM): 37.6 mg/m^3
% NPS Change: 0%
% PS Change: 0%

**NON-POINT SOURCE DATA**

| Land Use | Acre | Low | Most Likely | High | Loading % | Low | Most Likely | High |
|---|---|---|---|---|---|---|---|---|
| | (ac) | Loading (kg/ha-year) | | | | Loading (kg/year) | | |
| Row Crop AG | 0.0 | 0.50 | 1.00 | 3.00 | 0.0 | 0 | 0 | 0 |
| Mixed AG | 0.0 | 0.30 | 0.80 | 1.40 | 0.0 | 0 | 0 | 0 |
| Pasture/Grass | 69 | 0.10 | 0.30 | 0.50 | 10.4 | 3 | 8 | 14 |
| HD Urban (1/8 Ac) | 0.0 | 1.00 | 1.50 | 2.00 | 0.0 | 0 | 0 | 0 |
| MD Urban (1/4 Ac) | 0.0 | 0.30 | 0.50 | 0.80 | 0.0 | 0 | 0 | 0 |
| Rural Res (>1 Ac) | 5 | 0.05 | 0.10 | 0.25 | 0.3 | 0 | 0 | 1 |
| Wetlands | 75 | 0.10 | 0.10 | 0.10 | 3.8 | 3 | 3 | 3 |
| Forest | 487.0 | 0.05 | 0.09 | 0.18 | 21.9 | 10 | 18 | 35 |
| Lake Surface | 386.0 | 0.10 | 0.30 | 1.00 | 58.0 | 16 | 47 | 156 |

**POINT SOURCE DATA**

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

**SEPTIC TANK DATA**

| Description | | Low | Most Likely | High | Loading % |
|---|---|---|---|---|---|
| Septic Tank Output (kg/capita-year) | | 0.30 | 0.50 | 0.80 | |
| # capita-years | 93.0 | | | | |
| % Phosphorus Retained by Soil | | 98.0 | 90.0 | 80.0 | |
| Septic Tank Loading (kg/year) | | 0.56 | 4.65 | 14.88 | 5.8 |

**TOTALS DATA**

| Description | Low | Most Likely | High | Loading % |
|---|---|---|---|---|
| Total Loading (lb) | 70.5 | 178.3 | 494.0 | 100.0 |
| Total Loading (kg) | 32.0 | 80.9 | 224.1 | 100.0 |
| Areal Loading (lb/ac-year) | 0.18 | 0.46 | 1.28 | |
| Areal Loading (mg/m^2-year) | 20.46 | 51.77 | 143.44 | |
| Total PS Loading (lb) | 0.0 | 0.0 | 0.0 | 0.0 |
| Total PS Loading (kg) | 0.0 | 0.0 | 0.0 | 0.0 |
| Total NPS Loading (lb) | 34.8 | 64.7 | 116.8 | 94.2 |
| Total NPS Loading (kg) | 15.8 | 29.4 | 53.0 | 94.2 |

## Phosphorus Prediction and Uncertainty Analysis Module

Date: 4/26/2018  Scenario: 302
Observed spring overturn total phosphorus (SPO): 34.5 mg/m^3
Observed growing season mean phosphorus (GSM): 37.6 mg/m^3
Back calculation for SPO total phosphorus: 0.0 mg/m^3
Back calculation GSM phosphorus: 0.0 mg/m^3
% Confidence Range: 70%
Nurenberg Model Input - Est. Gross Int. Loading: 0 kg

| Lake Phosphorus Model | Low Total P (mg/m^3) | Most Likely Total P (mg/m^3) | High Total P (mg/m^3) | Predicted -Observed (mg/m^3) | % Dif. |
|---|---|---|---|---|---|
| Walker, 1987 Reservoir | 15 | 39 | 108 | 1 | 3 |
| Canfield-Bachmann, 1981 Natural Lake | 12 | 24 | 47 | -14 | -37 |
| Canfield-Bachmann, 1981 Artificial Lake | 13 | 23 | 40 | -15 | -40 |
| Rechow, 1979 General | 2 | 4 | 12 | -34 | -90 |
| Rechow, 1977 Anoxic | 18 | 47 | 129 | 9 | 24 |
| Rechow, 1977 water load<50m/year | 5 | 13 | 37 | -25 | -66 |
| Rechow, 1977 water load>50m/year | N/A | N/A | N/A | N/A | N/A |
| Walker, 1977 General | 13 | 33 | 90 | -2 | -6 |
| Vollenweider, 1982 Combined OECD | 11 | 24 | 55 | -12 | -33 |
| Dillon-Rigler-Kirchner | 7 | 18 | 51 | -17 | -49 |
| Vollenweider, 1982 Shallow Lake/Res. | 8 | 19 | 47 | -17 | -47 |
| Larsen-Mercier, 1976 | 11 | 28 | 77 | -7 | -20 |
| Nurnberg, 1984 Oxic | 6 | 15 | 43 | -23 | -61 |

| Lake Phosphorus Model | Confidence Lower Bound | Confidence Upper Bound | Parameter Fit? | Back Calculation (kg/year) | Model Type |
|---|---|---|---|---|---|
| Walker, 1987 Reservoir | 21 | 83 | Tw | 0 | GSM |
| Canfield-Bachmann, 1981 Natural Lake | 7 | 69 | FIT | 1 | GSM |
| Canfield-Bachmann, 1981 Artificial Lake | 7 | 66 | FIT | 1 | GSM |
| Rechow, 1979 General | 2 | 9 | L qs | 0 | GSM |
| Rechow, 1977 Anoxic | 25 | 99 | FIT | 0 | GSM |
| Rechow, 1977 water load<50m/year | 7 | 28 | FIT | 0 | GSM |
| Rechow, 1977 water load>50m/year | N/A | N/A | N/A | N/A | N/A |
| Walker, 1977 General | 15 | 73 | FIT | 0 | SPO |
| Vollenweider, 1982 Combined OECD | 11 | 49 | FIT | 0 | ANN |
| Dillon-Rigler-Kirchner | 10 | 39 | P L qs | 0 | SPO |
| Vollenweider, 1982 Shallow Lake/Res. | 9 | 40 | FIT | 0 | ANN |
| Larsen-Mercier, 1976 | 16 | 59 | P Pin | 0 | SPO |
| Nurnberg, 1984 Oxic | 7 | 34 | FIT | 0 | ANN |

## Water and Nutrient Outflow Module

Date: 4/26/2018  Scenario: 259
Average Annual Surface Total Phosphorus: 37.6mg/m^3
Annual Discharge: 8.33E+002 AF => 1.03E+006 m^3
Annual Outflow Loading:  81.6 LB =>  37.0 kg

**Date: 4/26/2018 Scenario: Horsehead Lake Watershed Scenario 1**

Lake Id: Horsehead Lake
Watershed Id: 0

**Hydrologic and Morphometric Data**

Tributary Drainage Area: 635.0 acre
Total Unit Runoff: 12.20 in.
Annual Runoff Volume: 645.6 acre-ft
Lake Surface Area <As>: 386.0 acre
Lake Volume <V>: 2746.0 acre-ft
Lake Mean Depth <z>: 7.1 ft
Precipitation - Evaporation: 5.8 in.
Hydraulic Loading: 832.2 acre-ft/year
Areal Water Load <qs>: 2.2 ft/year
Lake Flushing Rate <p>: 0.30 1/year
Water Residence Time: 3.30 year
Observed spring overturn total phosphorus (SPO): 34.5 mg/m^3
Observed growing season mean phosphorus (GSM): 37.6 mg/m^3
% NPS Change: 0%
% PS Change: 0%

**NON-POINT SOURCE DATA**

| Land Use | Acre (ac) | Low | Most Likely | High | Loading % | Low | Most Likely | High |
|---|---|---|---|---|---|---|---|---|
| | | Loading (kg/ha-year) | | | | Loading (kg/year) | | |
| Row Crop AG | 243 | 0.50 | 1.00 | 3.00 | 57.7 | 49 | 98 | 295 |
| Mixed AG | 0.0 | 0.30 | 0.80 | 1.40 | 0.0 | 0 | 0 | 0 |
| Pasture/Grass | 69 | 0.10 | 0.30 | 0.50 | 4.9 | 3 | 8 | 14 |
| HD Urban (1/8 Ac) | 0.0 | 1.00 | 1.50 | 2.00 | 0.0 | 0 | 0 | 0 |
| MD Urban (1/4 Ac) | 0.0 | 0.30 | 0.50 | 0.80 | 0.0 | 0 | 0 | 0 |
| Rural Res (>1 Ac) | 5 | 0.05 | 0.10 | 0.25 | 0.1 | 0 | 0 | 1 |
| Wetlands | 75.0 | 0.10 | 0.10 | 0.10 | 1.8 | 3 | 3 | 3 |
| Forest | 243.0 | 0.05 | 0.09 | 0.18 | 5.2 | 5 | 9 | 18 |
| Lake Surface | 386.0 | 0.10 | 0.30 | 1.00 | 27.5 | 16 | 47 | 156 |

**POINT SOURCE DATA**

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

**SEPTIC TANK DATA**

| Description | | Low | Most Likely | High | Loading % |
|---|---|---|---|---|---|
| Septic Tank Output (kg/capita-year) | | 0.30 | 0.50 | 0.80 | |
| # capita-years | 93.0 | | | | |
| % Phosphorus Retained by Soil | | 98.0 | 90.0 | 80.0 | |
| Septic Tank Loading (kg/year) | | 0.56 | 4.65 | 14.88 | 2.7 |

**TOTALS DATA**

| Description | Low | Most Likely | High | Loading % |
|---|---|---|---|---|
| Total Loading (lb) | 168.0 | 375.5 | 1105.2 | 100.0 |
| Total Loading (kg) | 76.2 | 170.3 | 501.3 | 100.0 |
| Areal Loading (lb/ac-year) | 0.44 | 0.97 | 2.86 | |
| Areal Loading (mg/m^2-year) | 48.78 | 109.03 | 320.93 | |
| Total PS Loading (lb) | 0.0 | 0.0 | 0.0 | 0.0 |
| Total PS Loading (kg) | 0.0 | 0.0 | 0.0 | 0.0 |
| Total NPS Loading (lb) | 132.3 | 261.9 | 728.0 | 97.3 |
| Total NPS Loading (kg) | 60.0 | 118.8 | 330.2 | 97.3 |

## Phosphorus Prediction and Uncertainty Analysis Module

Date: 4/26/2018  Scenario: 303
Observed spring overturn total phosphorus (SPO): 34.5 mg/m^3
Observed growing season mean phosphorus (GSM): 37.6 mg/m^3
Back calculation for SPO total phosphorus: 0.0 mg/m^3
Back calculation GSM phosphorus: 0.0 mg/m^3
% Confidence Range: 70%
Nurenberg Model Input - Est. Gross Int. Loading: 0 kg

| Lake Phosphorus Model | Low Total P (mg/m^3) | Most Likely Total P (mg/m^3) | High Total P (mg/m^3) | Predicted -Observed (mg/m^3) | % Dif. |
|---|---|---|---|---|---|
| Walker, 1987 Reservoir | 28 | 63 | 184 | 25 | 66 |
| Canfield-Bachmann, 1981 Natural Lake | 23 | 39 | 78 | 1 | 3 |
| Canfield-Bachmann, 1981 Artificial Lake | 22 | 35 | 60 | -3 | -8 |
| Rechow, 1979 General | 4 | 9 | 26 | -29 | -77 |
| Rechow, 1977 Anoxic | 44 | 98 | 289 | 60 | 160 |
| Rechow, 1977 water load<50m/year | 12 | 28 | 82 | -10 | -27 |
| Rechow, 1977 water load>50m/year | N/A | N/A | N/A | N/A | N/A |
| Walker, 1977 General | 31 | 69 | 202 | 35 | 101 |
| Vollenweider, 1982 Combined OECD | 23 | 44 | 106 | 8 | 22 |
| Dillon-Rigler-Kirchner | 17 | 39 | 114 | 5 | 14 |
| Vollenweider, 1982 Shallow Lake/Res. | 18 | 37 | 95 | 1 | 3 |
| Larsen-Mercier, 1976 | 26 | 59 | 173 | 25 | 72 |
| Nurnberg, 1984 Oxic | 15 | 33 | 96 | -5 | -13 |

| Lake Phosphorus Model | Confidence Lower Bound | Confidence Upper Bound | Parameter Fit? | Back Calculation (kg/year) | Model Type |
|---|---|---|---|---|---|
| Walker, 1987 Reservoir | 35 | 140 | Tw | 0 | GSM |
| Canfield-Bachmann, 1981 Natural Lake | 12 | 112 | FIT | 1 | GSM |
| Canfield-Bachmann, 1981 Artificial Lake | 11 | 101 | FIT | 1 | GSM |
| Rechow, 1979 General | 5 | 20 | qs | 0 | GSM |
| Rechow, 1977 Anoxic | 56 | 219 | FIT | 0 | GSM |
| Rechow, 1977 water load<50m/year | 15 | 63 | FIT | 0 | GSM |
| Rechow, 1977 water load>50m/year | N/A | N/A | N/A | N/A | N/A |
| Walker, 1977 General | 33 | 160 | FIT | 0 | SPO |
| Vollenweider, 1982 Combined OECD | 21 | 92 | FIT | 0 | ANN |
| Dillon-Rigler-Kirchner | 22 | 87 | P qs | 0 | SPO |
| Vollenweider, 1982 Shallow Lake/Res. | 18 | 80 | FIT | 0 | ANN |
| Larsen-Mercier, 1976 | 35 | 131 | P Pin | 0 | SPO |
| Nurnberg, 1984 Oxic | 17 | 75 | FIT | 0 | ANN |

# E

# APPENDIX E

## Aquatic Plant Survey Data

| Point Number | Latitude (Decimal Degrees) | Longitude (Decimal Degrees) | ID | Lake Name | County | Date | Field Crew | Point Number | Depth (ft) | Sediment | Pole;Rope | Comments | Notes | Nuisance | Total Rake Fullness | Potamogeton crispus | Brasenia schreberi | Ceratophyllum demersum | Chara spp. | Elodea canadensis | Myriophyllum sibiricum | Nuphar variegata | Nymphaea odorata | Potamogeton amplifolius | Potamogeton richardsonii | Potamogeton robbinsii | Potamogeton zosteriformis | Sagittaria sp. (rosette) | Stuckenia pectinata | Vallisneria americana | Filamentous algae |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 45.791218 | -89.592830 | 422 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 1 | 0 | | | TERRESTRIAL | | | | | | | | | | | | | | | | | | | |
| 2 | 45.792710 | -89.592819 | 455 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 2 | 0 | | | TERRESTRIAL | | | | | | | | | | | | | | | | | | | |
| 3 | 45.774805 | -89.592239 | 30 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 3 | 0 | | | NONNAVIGABLE (PLANTS) | | | | | | | | | | | | | | | | | | | |
| 4 | 45.775302 | -89.592235 | 32 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 4 | 0 | | | NONNAVIGABLE (PLANTS) | | | | | | | | | | | | | | | | | | | |
| 5 | 45.791216 | -89.592119 | 421 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 5 | 0 | | | SHALLOW | | | | | | | | | | | | | | | | | | | |
| 6 | 45.791713 | -89.592115 | 424 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 6 | 4 | Muck | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | |
| 7 | 45.792210 | -89.592112 | 425 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 7 | 4 | Muck | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | |
| 8 | 45.792708 | -89.592108 | 454 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 8 | 4 | Muck | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | |
| 9 | 45.793205 | -89.592104 | 456 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 9 | 3 | Sand | Pole | SAMPLED | | | 1 | | | | | 1 | | 1 | | | | | | | |
| 10 | 45.793702 | -89.592101 | 482 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 10 | 3 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | |
| 11 | 45.773310 | -89.591539 | 8 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 11 | 0 | | | NONNAVIGABLE (PLANTS) | | | | | | | | | | | | | | | | | | | |
| 12 | 45.773808 | -89.591535 | 15 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 12 | 4 | Muck | Pole | SAMPLED | | | 2 | | | | | | | | | 2 | | | | | | |
| 13 | 45.774305 | -89.591531 | 16 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 13 | 5 | Muck | Pole | SAMPLED | | | 1 | | | | | | | 1 | | | | | | | | |
| 14 | 45.774802 | -89.591528 | 29 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 14 | 5 | Muck | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | |
| 15 | 45.775299 | -89.591524 | 31 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 15 | 3 | Muck | Pole | SAMPLED | | | 1 | | | | 1 | | | 1 | | | | | | | | |
| 16 | 45.775797 | -89.591521 | 51 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 16 | 3 | Muck | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | |
| 17 | 45.782759 | -89.591470 | 206 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 17 | 5 | Muck | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | |
| 18 | 45.783256 | -89.591466 | 207 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 18 | 0 | | | DOCK | | | | | | | | | | | | | | | | | | | |
| 19 | 45.791213 | -89.591408 | 420 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 19 | 3 | Sand | Pole | SAMPLED | | | 1 | | | | | | | 1 | | | | | | | | |
| 20 | 45.791710 | -89.591404 | 423 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 20 | 4 | Muck | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | |
| 21 | 45.792208 | -89.591401 | 426 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 21 | 4 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | |
| 22 | 45.792705 | -89.591397 | 453 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 22 | 5 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | |
| 23 | 45.793202 | -89.591393 | 457 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 23 | 5 | Muck | Pole | SAMPLED | | | 2 | | | | 1 | 2 | | | | | | | | | | |
| 24 | 45.793700 | -89.591390 | 481 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 24 | 4 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | |
| 25 | 45.794197 | -89.591386 | 483 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 25 | 0 | | | NONNAVIGABLE (PLANTS) | | | | | | | | | | | | | | | | | | | |
| 26 | 45.771816 | -89.590839 | 2 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 26 | 1 | Muck | Pole | SAMPLED | | | 1 | | | 1 | 1 | 1 | | | | | | | | | | |
| 27 | 45.772313 | -89.590835 | 3 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 27 | 3 | Muck | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | 1 |
| 28 | 45.772810 | -89.590832 | 7 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 28 | 4 | Muck | Pole | SAMPLED | | | 1 | | | | | | | | | 1 | | 1 | 1 | | | |
| 29 | 45.773308 | -89.590828 | 9 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 29 | 5 | Muck | Pole | SAMPLED | | | 3 | | | | | 2 | | | | | | | 1 | | | |
| 30 | 45.773805 | -89.590824 | 14 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 30 | 5 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | 1 | | | |
| 31 | 45.774302 | -89.590821 | 17 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 31 | 4 | Muck | Pole | SAMPLED | | | 1 | | | | | | | | | | | 1 | | | | |
| 32 | 45.774800 | -89.590817 | 28 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 32 | 5 | Muck | Pole | SAMPLED | | | 2 | | | | | | | | | 2 | | | | | | |
| 33 | 45.775297 | -89.590814 | 33 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 33 | 5 | Muck | Pole | SAMPLED | | | 1 | | | | | | | | | 1 | | | | | | |
| 34 | 45.775794 | -89.590810 | 50 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 34 | 5 | Muck | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | |
| 35 | 45.780767 | -89.590774 | 152 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 35 | 5 | Sand | Pole | SAMPLED | | | 1 | | | 1 | | 1 | | | | | | 1 | | | | |
| 36 | 45.781265 | -89.590770 | 153 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 36 | 6 | Muck | Pole | SAMPLED | | | 1 | | | 1 | | 1 | | | | | | 1 | | | | |
| 37 | 45.781762 | -89.590766 | 179 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 37 | 7 | Muck | Pole | SAMPLED | | | 1 | | | 1 | | | | | | | | | | | | |
| 38 | 45.782259 | -89.590763 | 180 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 38 | 7 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | |
| 39 | 45.782756 | -89.590759 | 205 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 39 | 6 | Muck | Pole | SAMPLED | | | 2 | | | 2 | | | | | | | | 1 | 1 | | | |
| 40 | 45.783254 | -89.590755 | 208 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 40 | 6 | Muck | Pole | SAMPLED | | | 3 | | | | | 1 | | | | | | | 2 | | | |
| 41 | 45.783751 | -89.590752 | 233 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 41 | 3 | Rock | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | |
| 42 | 45.784248 | -89.590748 | 234 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 42 | 5 | Sand | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | |
| 43 | 45.784746 | -89.590744 | 259 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 43 | 4 | Sand | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | |
| 44 | 45.785243 | -89.590741 | 260 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 44 | 5 | Sand | Pole | SAMPLED | | | 2 | | | | | | | | | 2 | | | 1 | | | |
| 45 | 45.785740 | -89.590737 | 285 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 45 | 0 | | | TERRESTRIAL | | | | | | | | | | | | | | | | | | | |
| 46 | 45.791211 | -89.590697 | 419 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 46 | 1 | Sand | Pole | SAMPLED | | | 1 | | | | | | | | 1 | | | | | | | |
| 47 | 45.791708 | -89.590693 | 418 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 47 | 5 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | |
| 48 | 45.792205 | -89.590690 | 427 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 48 | 5 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | |
| 49 | 45.792703 | -89.590686 | 452 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 49 | 4 | Muck | Pole | SAMPLED | | | 2 | | | | | | | | | 2 | | | | | | |
| 50 | 45.793200 | -89.590683 | 458 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 50 | 6 | Muck | Pole | SAMPLED | | | 3 | | | | | 3 | | | | | | 1 | | | | |
| 51 | 45.793697 | -89.590679 | 480 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 51 | 4 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | | | | |
| 52 | 45.794194 | -89.590675 | 484 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 52 | 4 | Muck | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | |
| 53 | 45.771813 | -89.590128 | 1 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 53 | 3 | Muck | Pole | SAMPLED | 7-18-17 | | 1 | | | | | | | | 1 | | | | | | | |
| 54 | 45.772311 | -89.590125 | 4 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 54 | 2 | Muck | Pole | SAMPLED | | | 2 | | 1 | | | 1 | | | | 1 | | | | | | |
| 55 | 45.772808 | -89.590121 | 5 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 55 | 4 | Muck | Pole | SAMPLED | | | 1 | | | | | | | | | | | 1 | | | | |
| 56 | 45.773305 | -89.590117 | 10 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 56 | 5 | Muck | Pole | SAMPLED | | | 1 | | | | | | | | | | | 1 | | | | |
| 57 | 45.773802 | -89.590114 | 13 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 57 | 5 | Muck | Pole | SAMPLED | | | 1 | | | | | | | | | | | 1 | | | | |
| 58 | 45.774300 | -89.590110 | 18 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 58 | 5 | Muck | Pole | SAMPLED | | | 3 | | | | | | | | | 2 | | 2 | | | | |
| 59 | 45.774797 | -89.590106 | 27 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 59 | 6 | Muck | Pole | SAMPLED | | | 2 | | | | | 1 | | | | 1 | | 1 | | | | 1 | |

| Point Number | Latitude (Decimal Degrees) | Longitude (Decimal Degrees) | ID | Lake Name | County | Date | Field Crew | Point Number | Depth (ft) | Sediment | Pole;Rope | Comments | Notes | Nuisance | Total Rake Fullness | Potamogeton crispus | Brasenia schreberi | Ceratophyllum demersum | Chara spp. | Elodea canadensis | Myriophyllum sibiricum | Nuphar variegata | Nymphaea odorata | Potamogeton amplifolius | Potamogeton richardsonii | Potamogeton robbinsii | Potamogeton zosteriformis | Sagittaria sp. (rosette) | Stuckenia pectinata | Vallisneria americana | Filamentous algae |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 60 | 45.775294 | -89.590103 | 34 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 60 | 6 | Muck | Pole | SAMPLED | | | 1 | | | | | | | | | | | 1 | | | | | |
| 61 | 45.775792 | -89.590099 | 49 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 61 | 6 | Muck | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | | |
| 62 | 45.776289 | -89.590096 | 52 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 62 | 6 | Muck | Pole | SAMPLED | | | 1 | | | | | | | | | | | 1 | | | | | |
| 63 | 45.776786 | -89.590092 | 69 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 63 | 5 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | |
| 64 | 45.777284 | -89.590088 | 70 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 64 | 2 | Sand | Pole | SAMPLED | | | 1 | | | | | | | | | | | | 1 | | | | |
| 65 | 45.779273 | -89.590074 | 107 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 65 | 5 | Muck | Pole | SAMPLED | | | 1 | | | 1 | | 1 | | | | | | 1 | | | | | |
| 66 | 45.779770 | -89.590070 | 127 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 66 | 5 | Sand | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | | |
| 67 | 45.780267 | -89.590066 | 128 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 67 | 7 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | 1 | | | | | | | | | | | |
| 68 | 45.780765 | -89.590063 | 151 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 68 | 7 | Muck | Pole | SAMPLED | | | 2 | | | 2 | | | | | | | | | 1 | | | | |
| 69 | 45.781262 | -89.590059 | 154 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 69 | 8 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | | | | | | | 1 | 1 | | | | |
| 70 | 45.781759 | -89.590055 | 178 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 70 | 8 | Muck | Pole | SAMPLED | | | 3 | | | | | | | | | | | | 3 | | | | |
| 71 | 45.782257 | -89.590052 | 181 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 71 | 8 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | 1 | | | | | | | 3 | | | | |
| 72 | 45.782754 | -89.590048 | 204 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 72 | 8 | Muck | Pole | SAMPLED | | | 2 | | | 1 | | | | | | | | 1 | 2 | | | | |
| 73 | 45.783251 | -89.590045 | 209 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 73 | 7 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | 1 | | 1 | | | | | |
| 74 | 45.783749 | -89.590041 | 232 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 74 | 7 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | | | | 1 | | | | |
| 75 | 45.784246 | -89.590037 | 235 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 75 | 7 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | | | | | | | | 3 | | | | |
| 76 | 45.784743 | -89.590034 | 258 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 76 | 7 | Muck | Pole | SAMPLED | | | 1 | | | | | | | | | | | | 1 | | | | |
| 77 | 45.785240 | -89.590030 | 261 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 77 | 7 | Muck | Pole | SAMPLED | | | 1 | | | | | | | | | | | | 1 | | | | |
| 78 | 45.785738 | -89.590026 | 284 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 78 | 6 | Muck | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | | |
| 79 | 45.787727 | -89.590012 | 309 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 79 | 3 | Sand | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | | |
| 80 | 45.788722 | -89.590004 | 339 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 80 | 4 | Sand | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | |
| 81 | 45.789219 | -89.590001 | 340 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 81 | 4 | Sand | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | | |
| 82 | 45.789716 | -89.589997 | 365 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 82 | 2 | Sand | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | 1 | |
| 83 | 45.791705 | -89.589983 | 417 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 83 | 5 | Muck | Pole | SAMPLED | | | 2 | | | | | 1 | | | | 2 | | | | | | | |
| 84 | 45.792203 | -89.589979 | 428 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 84 | 5 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | 1 | | | | | |
| 85 | 45.792700 | -89.589975 | 451 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 85 | 5 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | |
| 86 | 45.793197 | -89.589972 | 459 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 86 | 5 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | |
| 87 | 45.793695 | -89.589968 | 479 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 87 | 4 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | | | | | |
| 88 | 45.794192 | -89.589964 | 485 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 88 | 4 | Muck | Pole | SAMPLED | | | 3 | | | | | 3 | | | | | | 1 | | | | | |
| 89 | 45.772805 | -89.589410 | 6 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 89 | 2 | Muck | Pole | SAMPLED | | | 1 | | | | | | | | | | | 1 | 1 | | | | |
| 90 | 45.773303 | -89.589407 | 11 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 90 | 4 | Muck | Pole | SAMPLED | | | 2 | | | | | 1 | | | | | | 2 | | | | | |
| 91 | 45.773800 | -89.589403 | 12 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 91 | 1 | Rock | Pole | SAMPLED | | | 1 | | | | | | | | | | | | | 1 | | | |
| 92 | 45.774297 | -89.589399 | 19 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 92 | 5 | Muck | Pole | SAMPLED | | | 1 | | | | | | | | | | | 1 | | | | | |
| 93 | 45.774795 | -89.589396 | 26 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 93 | 6 | Muck | Pole | SAMPLED | | | 2 | | | | | | | | | | | 2 | | | | | |
| 94 | 45.775292 | -89.589392 | 35 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 94 | 6 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | 1 | | | | | | 1 | 3 | | | | |
| 95 | 45.775789 | -89.589389 | 48 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 95 | 6 | Muck | Pole | SAMPLED | | | 3 | | | | | 1 | | | | | | 2 | 1 | | | | |
| 96 | 45.776286 | -89.589385 | 53 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 96 | 7 | Muck | Pole | SAMPLED | | | 2 | | | | | | | | | | | 1 | 1 | | | | |
| 97 | 45.776784 | -89.589381 | 68 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 97 | 7 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | | | | 1 | | | | |
| 98 | 45.777281 | -89.589378 | 71 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 98 | 7 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | | | | | | | 1 | 1 | | | | |
| 99 | 45.777778 | -89.589374 | 88 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 99 | 2 | Sand | Pole | SAMPLED | | | 1 | | | | | | | | | | | | | 1 | | | |
| 100 | 45.778276 | -89.589370 | 89 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 100 | 6 | Sand | Pole | SAMPLED | | | 2 | | | | | 1 | | | | | | 1 | 2 | | | | |
| 101 | 45.778773 | -89.589367 | 106 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 101 | 8 | Muck | Pole | SAMPLED | | | 2 | | | 2 | | | | | | | | | | | | | |
| 102 | 45.779270 | -89.589363 | 108 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 102 | 8 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | | | | | | | | 3 | | | | |
| 103 | 45.779768 | -89.589359 | 126 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 103 | 8 | Muck | Pole | SAMPLED | | | 2 | | | 1 | | 1 | | | | | | 1 | | | | | |
| 104 | 45.780265 | -89.589356 | 129 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 104 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | | | | | | | 1 | 3 | | | | |
| 105 | 45.780762 | -89.589352 | 150 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 105 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | 1 | | | | | | | 3 | | | | |
| 106 | 45.781259 | -89.589348 | 155 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 106 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | | | | | | | | 3 | | | | |
| 107 | 45.781757 | -89.589345 | 177 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 107 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | | | | | | | | 3 | | | | |
| 108 | 45.782254 | -89.589341 | 182 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 108 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | | | | | | | | 3 | | | | |
| 109 | 45.782751 | -89.589337 | 203 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 109 | 8 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | | | | | | | | 3 | | | | |
| 110 | 45.783249 | -89.589334 | 210 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 110 | 9 | Muck | Pole | SAMPLED | | | 3 | | | | | | | | | 1 | | | 3 | | | | |
| 111 | 45.783746 | -89.589330 | 231 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 111 | 7 | Muck | Pole | SAMPLED | | | 1 | | | | | | | | | | | 1 | | | | | |
| 112 | 45.784243 | -89.589326 | 236 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 112 | 8 | Muck | Pole | SAMPLED | | | 2 | | | 1 | | | | | | | | | 2 | | | | |
| 113 | 45.784741 | -89.589323 | 257 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 113 | 8 | Muck | Pole | SAMPLED | | | 2 | | | 1 | | 1 | | | | | | | 2 | | | | |
| 114 | 45.785238 | -89.589319 | 262 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 114 | 8 | Muck | Pole | SAMPLED | | | 3 | | | | | | | | | | | | 3 | | | | |
| 115 | 45.785735 | -89.589316 | 283 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 115 | 7 | Muck | Pole | SAMPLED | | | 2 | | | 1 | | | | | | | | | | | | | |
| 116 | 45.786232 | -89.589312 | 286 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 116 | 7 | Sand | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | | |
| 117 | 45.786730 | -89.589308 | 297 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 117 | 7 | Sand | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | |
| 118 | 45.787227 | -89.589305 | 298 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 118 | 7 | Sand | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | | |

| Point Number | Latitude (Decimal Degrees) | Longitude (Decimal Degrees) | ID | Lake Name | County | Date | Field Crew | Point Number | Depth (ft) | Sediment | Pole;Rope | Comments | Notes | Nuisance | Total Rake Fullness | Potamogeton crispus | Brasenia schreberi | Ceratophyllum demersum | Chara spp. | Elodea canadensis | Myriophyllum sibiricum | Nuphar variegata | Nymphaea odorata | Potamogeton amplifolius | Potamogeton richardsonii | Potamogeton robbinsii | Potamogeton zosteriformis | Sagittaria sp. (rosette) | Stuckenia pectinata | Vallisneria americana | Filamentous algae |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 119 | 45.787724 | -89.589301 | 308 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 119 | 6 | Sand | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | | | | | |
| 120 | 45.788222 | -89.589297 | 310 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 120 | 7 | Muck | Pole | SAMPLED | | | 1 | | | | | | | | | | | | 1 | | | | |
| 121 | 45.788719 | -89.589294 | 338 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 121 | 6 | Muck | Pole | SAMPLED | | | 3 | | | | | 3 | | | | | | | | | | | |
| 122 | 45.789216 | -89.589290 | 341 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 122 | 6 | Muck | Pole | SAMPLED | | | 3 | | | | | 3 | | | | | | | | | | | |
| 123 | 45.789714 | -89.589286 | 364 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 123 | 6 | Muck | Pole | SAMPLED | | | 1 | | | | | | | | | | | 1 | | | | | |
| 124 | 45.790211 | -89.589283 | 366 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 124 | 5 | Sand | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | | |
| 125 | 45.790708 | -89.589279 | 391 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 125 | 4 | Rock | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | | |
| 126 | 45.791206 | -89.589275 | 392 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 126 | 4 | Rock | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | |
| 127 | 45.791703 | -89.589272 | 416 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 127 | 6 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | |
| 128 | 45.792200 | -89.589268 | 429 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 128 | 5 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | | | | | |
| 129 | 45.792697 | -89.589264 | 450 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 129 | 5 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | 1 | | | | |
| 130 | 45.793195 | -89.589261 | 460 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 130 | 5 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | | | | | |
| 131 | 45.793692 | -89.589257 | 478 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 131 | 5 | Muck | Pole | SAMPLED | | | 1 | 1 | | | | 1 | | | | | | | | | | | |
| 132 | 45.794189 | -89.589253 | 486 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 132 | 4 | Muck | Pole | SAMPLED | | | 2 | | | | | 1 | | | | | | | 1 | | | | |
| 133 | 45.794687 | -89.589250 | 500 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 133 | 0 | | | TERRESTRIAL | | | | | | | | | | | | | | | | | | | |
| 134 | 45.774295 | -89.588689 | 20 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 134 | 5 | Muck | Pole | SAMPLED | | | 1 | | | | | | | | | | | 1 | 1 | | | | |
| 135 | 45.774792 | -89.588685 | 25 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 135 | 6 | Muck | Pole | SAMPLED | | | 3 | | | | | 1 | | | | | | 1 | 2 | | | | |
| 136 | 45.775289 | -89.588681 | 36 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 136 | 7 | Muck | Pole | SAMPLED | | | 2 | | | | | | | | | | | 1 | 2 | | | | |
| 137 | 45.775787 | -89.588678 | 47 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 137 | 7 | Muck | Pole | SAMPLED | | | 3 | | | | | 1 | | | | | | 1 | 3 | | | | |
| 138 | 45.776284 | -89.588674 | 54 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 138 | 7 | Muck | Pole | SAMPLED | | | 2 | | | | | 1 | | | | | | 2 | | | | | |
| 139 | 45.776781 | -89.588671 | 67 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 139 | 7 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | 1 | | | | | | 1 | | | | | |
| 140 | 45.777278 | -89.588667 | 72 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 140 | 8 | Muck | Pole | SAMPLED | | | 3 | | | | | 3 | | | | | | 1 | | | | | |
| 141 | 45.777776 | -89.588663 | 87 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 141 | 9 | Muck | Pole | SAMPLED | | | 2 | | | 1 | | 1 | | | | | | | 1 | | | | |
| 142 | 45.778273 | -89.588660 | 90 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 142 | 8 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | 1 | | | | |
| 143 | 45.778770 | -89.588656 | 105 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 143 | 8 | Muck | Pole | SAMPLED | | | 3 | | | | | | | | | 3 | | | | | | | | |
| 144 | 45.779268 | -89.588652 | 109 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 144 | 8 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | 1 | | | | | | | 3 | | | | |
| 145 | 45.779765 | -89.588649 | 125 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 145 | 8 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | | | | | | | | 3 | | | | |
| 146 | 45.780262 | -89.588645 | 130 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 146 | 9 | Muck | Pole | SAMPLED | | | 2 | | | 1 | | 1 | | | | | | | 2 | | | | |
| 147 | 45.780760 | -89.588641 | 149 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 147 | 9 | Muck | Pole | SAMPLED | | | 3 | | | | | 1 | | | | | | | 3 | | | | |
| 148 | 45.781257 | -89.588638 | 156 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 148 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | | | | | | | | 3 | | | | |
| 149 | 45.781754 | -89.588634 | 176 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 149 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | 1 | | | | | | | 3 | | | | |
| 150 | 45.782252 | -89.588630 | 183 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 150 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | | | | | | | | 3 | | | | |
| 151 | 45.782749 | -89.588627 | 202 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 151 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | | | | | | | | 2 | | | | |
| 152 | 45.783246 | -89.588623 | 211 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 152 | 10 | Muck | Pole | SAMPLED | | | 3 | | | | | | | | | | | | 3 | | | | |
| 153 | 45.783743 | -89.588619 | 230 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 153 | 9 | Muck | Pole | SAMPLED | | | 3 | | | | | | | | | | | | 3 | | | | |
| 154 | 45.784241 | -89.588616 | 237 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 154 | 9 | Muck | Pole | SAMPLED | | | 2 | | | | | | | | | | | | 2 | | | | |
| 155 | 45.784738 | -89.588612 | 256 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 155 | 8 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | | | | | | | | 3 | | | | |
| 156 | 45.785235 | -89.588608 | 263 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 156 | 8 | Muck | Pole | SAMPLED | | | 3 | | | | | 1 | | | | 1 | | 1 | 1 | | | | |
| 157 | 45.785733 | -89.588605 | 282 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 157 | 7 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | | | | | | | 2 | 1 | | | | |
| 158 | 45.786230 | -89.588601 | 287 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 158 | 7 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | 2 | | | | | | | 1 | | | | |
| 159 | 45.786727 | -89.588597 | 296 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 159 | 7 | Muck | Pole | SAMPLED | | | 2 | | | 1 | | 2 | | | | | | | 1 | | | | |
| 160 | 45.787225 | -89.588594 | 299 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 160 | 7 | Muck | Pole | SAMPLED | | | 2 | | | | | 1 | | | | | | 1 | | | | | |
| 161 | 45.787722 | -89.588590 | 307 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 161 | 7 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | |
| 162 | 45.788219 | -89.588586 | 311 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 162 | 5 | Rock | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | | |
| 163 | 45.788716 | -89.588583 | 337 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 163 | 6 | Muck | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | | |
| 164 | 45.789214 | -89.588579 | 342 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 164 | 6 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | |
| 165 | 45.789711 | -89.588575 | 363 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 165 | 6 | Muck | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | | |
| 166 | 45.790208 | -89.588572 | 367 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 166 | 5 | Muck | Pole | SAMPLED | | | 3 | | | | | 2 | | | | | | | 1 | | | | |
| 167 | 45.790706 | -89.588568 | 390 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 167 | 5 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | |
| 168 | 45.791203 | -89.588564 | 393 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 168 | 5 | Muck | Pole | SAMPLED | | | 3 | | | | 3 | | | | | | | | 1 | | | | |
| 169 | 45.791700 | -89.588561 | 415 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 169 | 6 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | 1 | | | | |
| 170 | 45.792198 | -89.588557 | 430 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 170 | 6 | Muck | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | | |
| 171 | 45.792695 | -89.588553 | 449 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 171 | 6 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | |
| 172 | 45.793192 | -89.588550 | 461 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 172 | 6 | Muck | Pole | SAMPLED | | | 3 | 1 | | | | 3 | | | | | | | | | | | |
| 173 | 45.793689 | -89.588546 | 477 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 173 | 5 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | 1 | | | | |
| 174 | 45.794187 | -89.588542 | 487 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 174 | 5 | Muck | Pole | SAMPLED | | | 3 | | | | | 3 | | | | | | | | | | | |
| 175 | 45.794684 | -89.588539 | 499 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 175 | 5 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | 1 | | | | |
| 176 | 45.774789 | -89.587974 | 21 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 176 | 6 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | 1 | | | | | | 1 | 1 | | | | |
| 177 | 45.775287 | -89.587971 | 37 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 177 | 7 | Muck | Pole | SAMPLED | | | 2 | | | 1 | | | | | | | | 2 | | | | | |

| Point Number | Latitude (Decimal Degrees) | Longitude (Decimal Degrees) | ID | Lake Name | County | Date | Field Crew | Point Number | Depth (ft) | Sediment | Pole;Rope | Comments | Notes | Nuisance | Total Rake Fullness | Potamogeton crispus | Brasenia schreberi | Ceratophyllum demersum | Chara spp. | Elodea canadensis | Myriophyllum sibiricum | Nuphar variegata | Nymphaea odorata | Potamogeton amplifolius | Potamogeton richardsonii | Potamogeton robbinsii | Potamogeton zosteriformis | Sagittaria sp. (rosette) | Stuckenia pectinata | Vallisneria americana | Filamentous algae |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 178 | 45.775784 | -89.587967 | 46 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 178 | 8 | Muck | Pole | SAMPLED | | | 2 | | | | | | | | | | | 1 | 1 | | | | |
| 179 | 45.776281 | -89.587963 | 55 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 179 | 8 | Muck | Pole | SAMPLED | | | 2 | | | 1 | | | | | | 1 | | 1 | 1 | | | | |
| 180 | 45.776779 | -89.587960 | 66 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 180 | 7 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | 1 | | | | |
| 181 | 45.777276 | -89.587956 | 73 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 181 | 8 | Muck | Pole | SAMPLED | | | 2 | | | | | 1 | | | | | | 2 | | | | | |
| 182 | 45.777773 | -89.587953 | 86 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 182 | 7 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | 1 | | | | | |
| 183 | 45.778271 | -89.587949 | 91 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 183 | 8 | Muck | Pole | SAMPLED | | | 3 | | | | | | | | | | | | 3 | | | | |
| 184 | 45.778768 | -89.587945 | 104 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 184 | 8 | Muck | Pole | SAMPLED | | | 2 | | | 1 | | 1 | | | | | | | 1 | | | | |
| 185 | 45.779265 | -89.587942 | 110 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 185 | 8 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | 1 | | | | | | | 3 | | | | |
| 186 | 45.779762 | -89.587938 | 124 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 186 | 8 | Muck | Pole | SAMPLED | | | 3 | | | | | | | | | | | | 3 | | | | |
| 187 | 45.780260 | -89.587934 | 131 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 187 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | | | | | | | | 3 | | | | |
| 188 | 45.780757 | -89.587931 | 148 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 188 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | 1 | | | | | | | 2 | | | | |
| 189 | 45.781254 | -89.587927 | 157 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 189 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | 1 | | | | | | | 3 | | | | |
| 190 | 45.781752 | -89.587923 | 175 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 190 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | | | | | | | | 2 | | | | |
| 191 | 45.782249 | -89.587920 | 184 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 191 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | | | | | | | | 3 | | | | |
| 192 | 45.782746 | -89.587916 | 201 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 192 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | | | | 2 | | | | |
| 193 | 45.783244 | -89.587912 | 212 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 193 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | | | | | | | | 3 | | | | |
| 194 | 45.783741 | -89.587909 | 229 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 194 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | | | | | | | 1 | 2 | | | | |
| 195 | 45.784238 | -89.587905 | 238 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 195 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | | | | | | | | 3 | | | | |
| 196 | 45.784735 | -89.587901 | 255 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 196 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | | | | | | | 2 | 3 | | | | |
| 197 | 45.785233 | -89.587898 | 264 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 197 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | 1 | | | | | | | 3 | | | | |
| 198 | 45.785730 | -89.587894 | 281 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 198 | 8 | Muck | Pole | SAMPLED | | | 3 | | | | | | | | | | | | 3 | | | | |
| 199 | 45.786227 | -89.587890 | 288 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 199 | 8 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | 1 | 1 | | | | |
| 200 | 45.786725 | -89.587887 | 295 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 200 | 8 | Muck | Pole | SAMPLED | | | 3 | | | | | 1 | | | | | | | 3 | | | | |
| 201 | 45.787222 | -89.587883 | 300 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 201 | 8 | Muck | Pole | SAMPLED | | | 2 | | | | | 1 | | | | | | | 1 | | | | |
| 202 | 45.787719 | -89.587879 | 306 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 202 | 7 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | 1 | | | | | | | 3 | | | | |
| 203 | 45.788217 | -89.587876 | 312 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 203 | 5 | Rock | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | |
| 204 | 45.788714 | -89.587872 | 336 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 204 | 5 | Rock | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | |
| 205 | 45.789211 | -89.587868 | 343 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 205 | 6 | Rock | Pole | SAMPLED | | | 1 | | | | 1 | | | | | | | | 1 | | | | |
| 206 | 45.789708 | -89.587865 | 362 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 206 | 6 | Muck | Pole | SAMPLED | | | 2 | | | | | 1 | | | | | | | 1 | | | | |
| 207 | 45.790206 | -89.587861 | 368 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 207 | 6 | Muck | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | | |
| 208 | 45.790703 | -89.587857 | 389 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 208 | 5 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | | | | | |
| 209 | 45.791200 | -89.587854 | 394 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 209 | 6 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | 1 | | | | |
| 210 | 45.791698 | -89.587850 | 414 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 210 | 5 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | 1 | | | | | | | |
| 211 | 45.792195 | -89.587846 | 431 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 211 | 5 | Muck | Pole | SAMPLED | | | 3 | | | | | 2 | | | | | | | 1 | | | | |
| 212 | 45.792692 | -89.587843 | 448 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 212 | 6 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | | | | | |
| 213 | 45.79319 | -89.5878389 | 462 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 213 | 5 | Muck | Pole | SAMPLED | | | 3 | | | | | 3 | | | | 1 | | | | | | | |
| 214 | 45.793687 | -89.5878352 | 476 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 214 | 5 | Muck | Pole | SAMPLED | | | 3 | | | | | 3 | | | | | | | | | | | |
| 215 | 45.794184 | -89.5878315 | 488 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 215 | 4 | Muck | Pole | SAMPLED | | | 3 | | | | | 3 | | | | | | | | | | | |
| 216 | 45.794681 | -89.5878279 | 498 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 216 | 4 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | |
| 217 | 45.774787 | -89.5872638 | 22 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 217 | 6 | Muck | Pole | SAMPLED | | | 3 | | | | | 1 | | | | | | 1 | 3 | | | | |
| 218 | 45.775284 | -89.5872601 | 38 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 218 | 7 | Muck | Pole | SAMPLED | | | 1 | | | | | | | | | | | 1 | | | | | |
| 219 | 45.775781 | -89.5872564 | 45 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 219 | 8 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | | | | | | | | 2 | | | | |
| 220 | 45.776279 | -89.5872528 | 56 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 220 | 9 | Muck | Pole | SAMPLED | | | 3 | | | | | | | | | | | | 3 | | | | |
| 221 | 45.776776 | -89.5872491 | 65 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 221 | 8 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | 1 | | | | | | 1 | 2 | | | | |
| 222 | 45.777273 | -89.5872454 | 74 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 222 | 8 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | | | | | | | 1 | | | | | |
| 223 | 45.777771 | -89.5872417 | 85 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 223 | 8 | Muck | Pole | SAMPLED | | | 2 | | | 1 | | | | | | 2 | | | | | | | |
| 224 | 45.778268 | -89.5872381 | 92 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 224 | 9 | Muck | Pole | SAMPLED | | | 2 | | | 1 | | 1 | | | | | | | 1 | | | | |
| 225 | 45.778765 | -89.5872344 | 103 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 225 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | | | | | | | 1 | 1 | | | | |
| 226 | 45.779263 | -89.5872307 | 111 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 226 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | 1 | | | 1 | | | | |
| 227 | 45.77976 | -89.5872271 | 123 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 227 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | 1 | | | | | | | 3 | | | | |
| 228 | 45.780257 | -89.5872234 | 132 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 228 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | | | | 1 | | | | |
| 229 | 45.780754 | -89.5872197 | 147 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 229 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | 1 | | | | | | | 2 | | | | |
| 230 | 45.781252 | -89.5872161 | 158 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 230 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | | | | | | | | |
| 231 | 45.781749 | -89.5872124 | 174 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 231 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | 1 | | | | | | | 3 | | | | |
| 232 | 45.782246 | -89.5872087 | 185 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 232 | 10 | Muck | Pole | SAMPLED | | | 2 | | | 2 | | 1 | | | | | | | | | | | |
| 233 | 45.782744 | -89.5872051 | 200 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 233 | 10 | Muck | Pole | SAMPLED | | | 2 | | | | | | | | | | | 2 | 1 | | | | |
| 234 | 45.783241 | -89.5872014 | 213 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 234 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | | | | | | | 1 | 2 | | | | |
| 235 | 45.783738 | -89.5871977 | 228 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 235 | 10 | Muck | Pole | SAMPLED | | | 2 | | | 1 | | | | | | | | 1 | 1 | | | | |
| 236 | 45.784236 | -89.587194 | 239 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 236 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | | | | | | | | 2 | | | | |

| Point Number | Latitude (Decimal Degrees) | Longitude (Decimal Degrees) | ID | Lake Name | County | Date | Field Crew | Point Number | Depth (ft) | Sediment | Pole;Rope | Comments | Notes | Nuisance | Total Rake Fullness | Potamogeton crispus | Brasenia schreberi | Ceratophyllum demersum | Chara spp. | Elodea canadensis | Myriophyllum sibiricum | Nuphar variegata | Nymphaea odorata | Potamogeton amplifolius | Potamogeton richardsonii | Potamogeton robbinsii | Potamogeton zosteriformis | Sagittaria sp. (rosette) | Stuckenia pectinata | Vallisneria americana | Filamentous algae |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 237 | 45.784733 | -89.5871904 | 254 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 237 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | | | | | | | 1 | 3 | | | | |
| 238 | 45.78523 | -89.5871867 | 265 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 238 | 9 | Muck | Pole | SAMPLED | | | 3 | | | | | 1 | | | | | | 1 | 2 | | | | |
| 239 | 45.785727 | -89.587183 | 280 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 239 | 8 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | | | | | | | | 3 | | | | |
| 240 | 45.786225 | -89.5871794 | 289 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 240 | 8 | Muck | Pole | SAMPLED | | | 3 | | | | | | | | | | | 1 | 3 | | | | |
| 241 | 45.786722 | -89.5871757 | 294 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 241 | 8 | Muck | Pole | SAMPLED | | | 3 | | | | | | | | | | | | 3 | | | | |
| 242 | 45.787219 | -89.587172 | 301 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 242 | 7 | Muck | Pole | SAMPLED | | | 3 | | | | | 3 | | | | | | | | | | | |
| 243 | 45.787717 | -89.5871683 | 305 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 243 | 7 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | 1 | | | | | | 1 | 2 | | | | |
| 244 | 45.788214 | -89.5871647 | 313 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 244 | 7 | Muck | Pole | SAMPLED | | | 3 | | | | | 1 | | | | | | | 3 | | | | |
| 245 | 45.788711 | -89.587161 | 335 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 245 | 7 | Muck | Pole | SAMPLED | | | 1 | | | 1 | | 1 | | | | | | 1 | 1 | | | | |
| 246 | 45.789209 | -89.5871573 | 344 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 246 | 7 | Muck | Pole | SAMPLED | | | 3 | | | | | 1 | | | | | | | 3 | | | | |
| 247 | 45.789706 | -89.5871537 | 361 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 247 | 7 | Muck | Pole | SAMPLED | | | 2 | | | | | 1 | | | | | | | 1 | | | | |
| 248 | 45.790203 | -89.58715 | 369 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 248 | 6 | Muck | Pole | SAMPLED | | | 3 | | | | | 2 | | | | | | | 1 | | | | |
| 249 | 45.790701 | -89.5871463 | 388 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 249 | 6 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | |
| 250 | 45.791198 | -89.5871426 | 395 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 250 | 6 | Muck | Pole | SAMPLED | | | 2 | | | 1 | | 2 | | | | | | | | | | | |
| 251 | 45.791695 | -89.587139 | 413 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 251 | 6 | Muck | Pole | SAMPLED | | | 1 | | | | | | | | | 1 | | | | | | | | |
| 252 | 45.792192 | -89.5871353 | 432 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 252 | 6 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | | | | | |
| 253 | 45.79269 | -89.5871316 | 447 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 253 | 6 | Muck | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | | |
| 254 | 45.793187 | -89.587128 | 463 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 254 | 5 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | 1 | | | | |
| 255 | 45.793684 | -89.5871243 | 475 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 255 | 5 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | 1 | | | | |
| 256 | 45.794182 | -89.5871206 | 489 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 256 | 4 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | 1 | 1 | | | | |
| 257 | 45.794679 | -89.5871169 | 497 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 257 | 5 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | 1 | |
| 258 | 45.774784 | -89.5865531 | 23 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 258 | 6 | Muck | Pole | SAMPLED | | | 3 | | | | | 3 | | | | | | | | | | | |
| 259 | 45.775282 | -89.5865494 | 39 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 259 | 7 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | 1 | | | | | | 1 | 1 | | | | |
| 260 | 45.775779 | -89.5865457 | 44 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 260 | 8 | Muck | Pole | SAMPLED | | | 2 | | | 2 | | | | | | | | | 1 | | | | |
| 261 | 45.776276 | -89.5865421 | 57 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 261 | 8 | Muck | Pole | SAMPLED | | | 2 | | | | | | | | | | | | 2 | | | | |
| 262 | 45.776773 | -89.5865384 | 64 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 262 | 8 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | | | | | | | | 1 | | | | |
| 263 | 45.777271 | -89.5865347 | 75 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 263 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | 1 | | | | | | | 1 | | | | |
| 264 | 45.777768 | -89.586531 | 84 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 264 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | | | | | | | | 3 | | | | |
| 265 | 45.778265 | -89.5865274 | 93 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 265 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | | | | | | | | 2 | | | | |
| 266 | 45.778763 | -89.5865237 | 102 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 266 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | | | | | | | 1 | 3 | | | | |
| 267 | 45.77926 | -89.58652 | 112 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 267 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | | | | | | | | 3 | | | | |
| 268 | 45.779757 | -89.5865163 | 122 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 268 | 10 | Muck | Pole | SAMPLED | | | 1 | | | 1 | | | | | | | | | 3 | | | | |
| 269 | 45.780255 | -89.5865127 | 133 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 269 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | | | | | | | | 1 | | | | |
| 270 | 45.780752 | -89.586509 | 146 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 270 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | 1 | | | | | | | | | | | |
| 271 | 45.781249 | -89.5865053 | 159 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 271 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | | | | | | | | 3 | | | | |
| 272 | 45.781747 | -89.5865016 | 173 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 272 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | | | 1 | | | | | | |
| 273 | 45.782244 | -89.586498 | 186 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 273 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | | | | 1 | | | | |
| 274 | 45.782741 | -89.5864943 | 199 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 274 | 10 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | |
| 275 | 45.783238 | -89.5864906 | 214 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 275 | 10 | Muck | Pole | SAMPLED | | | 2 | | | 1 | | 1 | | | | | | | 2 | | | | |
| 276 | 45.783736 | -89.5864869 | 227 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 276 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | | | | | | | | 3 | | | | |
| 277 | 45.784233 | -89.5864833 | 240 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 277 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | | | | 1 | | | | |
| 278 | 45.78473 | -89.5864796 | 253 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 278 | 9 | Muck | Pole | SAMPLED | | | 3 | | | | | 1 | | | | | | 1 | 3 | | | | |
| 279 | 45.785228 | -89.5864759 | 266 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 279 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | | | | | | | 1 | 3 | | | | |
| 280 | 45.785725 | -89.5864722 | 279 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 280 | 9 | Muck | Pole | SAMPLED | | | 2 | | | | | 1 | | | | | | 2 | 1 | | | | |
| 281 | 45.786222 | -89.5864685 | 290 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 281 | 8 | Muck | Pole | SAMPLED | | | 3 | | | | | 1 | | | | | | | 3 | | | | |
| 282 | 45.78672 | -89.5864649 | 293 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 282 | 8 | Muck | Pole | SAMPLED | | | 3 | | | | | 1 | | | | | | | 3 | | | | |
| 283 | 45.787217 | -89.5864612 | 302 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 283 | 8 | Muck | Pole | SAMPLED | | | 3 | | | | | 2 | | | | | | | 3 | | | | |
| 284 | 45.787714 | -89.5864575 | 304 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 284 | 9 | Muck | Pole | SAMPLED | | | 2 | | | | | 1 | | | | | | | 2 | | | | |
| 285 | 45.788211 | -89.5864538 | 314 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 285 | 9 | Sand | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | 1 | | | | | |
| 286 | 45.788709 | -89.5864502 | 334 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 286 | 8 | Muck | Pole | SAMPLED | | | 2 | | | 1 | | 1 | | | | | | 1 | | | | | |
| 287 | 45.789206 | -89.5864465 | 345 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 287 | 8 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | |
| 288 | 45.789703 | -89.5864428 | 360 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 288 | 6 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | | | | | |
| 289 | 45.790201 | -89.5864391 | 370 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 289 | 6 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | | | | | |
| 290 | 45.790698 | -89.5864354 | 387 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 290 | 6 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | 1 | | | | |
| 291 | 45.791195 | -89.5864318 | 396 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 291 | 6 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | |
| 292 | 45.791693 | -89.5864281 | 412 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 292 | 6 | Muck | Pole | SAMPLED | | | 3 | | | | | 1 | | | | | 3 | | | | | | |
| 293 | 45.79219 | -89.5864244 | 433 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 293 | 6 | Muck | Pole | SAMPLED | | | 3 | | | | | 3 | | | | | | | 1 | | | | |
| 294 | 45.792687 | -89.5864207 | 446 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 294 | 5 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | | | | | |
| 295 | 45.793184 | -89.5864171 | 464 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 295 | 5 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | | | | | |

| Point Number | Latitude (Decimal Degrees) | Longitude (Decimal Degrees) | ID | Lake Name | County | Date | Field Crew | Point Number | Depth (ft) | Sediment | Pole;Rope | Comments | Notes | Nuisance | Total Rake Fullness | Potamogeton crispus | Brasenia schreberi | Ceratophyllum demersum | Chara spp. | Elodea canadensis | Myriophyllum sibiricum | Nuphar variegata | Nymphaea odorata | Potamogeton amplifolius | Potamogeton richardsonii | Potamogeton robbinsii | Potamogeton zosteriformis | Sagittaria sp. (rosette) | Stuckenia pectinata | Vallisneria americana | Filamentous algae |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 296 | 45.793682 | -89.5864134 | 474 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 296 | 5 | Muck | Pole | SAMPLED | | | 3 | | | | | 3 | | | | | | 1 | | | | | |
| 297 | 45.794179 | -89.5864097 | 490 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 297 | 5 | Muck | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | | |
| 298 | 45.794676 | -89.586406 | 496 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 298 | 4 | Sand | Pole | SAMPLED | | | 2 | | | | | 1 | | | | | | | | | | 2 | |
| 299 | 45.774782 | -89.5858424 | 24 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 299 | 4 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | 1 | | | | 2 | | 1 | 1 | | | 1 | |
| 300 | 45.775279 | -89.5858387 | 40 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 300 | 7 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | | | | | | | | |
| 301 | 45.775776 | -89.5858351 | 43 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 301 | 8 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | | | | | | V | 1 | 1 | | | | |
| 302 | 45.776274 | -89.5858314 | 58 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 302 | 8 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | | | | 1 | | | | |
| 303 | 45.776771 | -89.5858277 | 63 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 303 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | 1 | | | | | | 1 | 2 | | | | |
| 304 | 45.777268 | -89.585824 | 76 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 304 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | | | | | | | | 2 | | | | |
| 305 | 45.777766 | -89.5858203 | 83 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 305 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | | | | | | | | 2 | | | | |
| 306 | 45.778263 | -89.5858167 | 94 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 306 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | | | | 1 | | | | |
| 307 | 45.77876 | -89.585813 | 101 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 307 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | 1 | | | | | | 1 | 2 | | | | |
| 308 | 45.779257 | -89.5858093 | 113 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 308 | 10 | Muck | Pole | SAMPLED | | | 2 | | | 1 | | | | | | | | | 2 | | | | |
| 309 | 45.779755 | -89.5858056 | 121 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 309 | 10 | Muck | Pole | SAMPLED | | | 2 | | | 1 | | | | | | | | | 1 | | | | |
| 310 | 45.780252 | -89.5858019 | 134 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 310 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | | | | 1 | | | | |
| 311 | 45.780749 | -89.5857982 | 145 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 311 | 10 | Muck | Pole | SAMPLED | | | 2 | | | 2 | | | | | | | | | 1 | | | | |
| 312 | 45.781247 | -89.5857946 | 160 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 312 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | 1 | | | | | | | 1 | | | | |
| 313 | 45.781744 | -89.5857909 | 172 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 313 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | 1 | | | | | | | 3 | | | | |
| 314 | 45.782241 | -89.5857872 | 187 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 314 | 10 | Muck | Pole | SAMPLED | | | 2 | | | 2 | | | | | | | | | | | | | |
| 315 | 45.782739 | -89.5857835 | 198 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 315 | 10 | Muck | Pole | SAMPLED | | | 2 | | | 1 | | | | | | | | | 2 | | | | |
| 316 | 45.783236 | -89.5857798 | 215 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 316 | 11 | Muck | Pole | SAMPLED | | | 1 | | | 1 | | | | | | | | | | | | | |
| 317 | 45.783733 | -89.5857761 | 226 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 317 | 10 | Muck | Pole | SAMPLED | | | 3 | | | | | | | | | | | 1 | 3 | | | | |
| 318 | 45.78423 | -89.5857725 | 241 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 318 | 10 | Muck | Pole | SAMPLED | | | 1 | | | 1 | | | | | | | | | 1 | | | | |
| 319 | 45.784728 | -89.5857688 | 252 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 319 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | | | | | | | | 3 | | | | |
| 320 | 45.785225 | -89.5857651 | 267 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 320 | 9 | Muck | Pole | SAMPLED | | | 2 | | | | | 1 | | | | | | | 1 | | | | |
| 321 | 45.785722 | -89.5857614 | 278 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 321 | 7 | Rock | Pole | SAMPLED | | | 3 | | | | | 2 | | | | | | 1 | 1 | | | | |
| 322 | 45.78622 | -89.5857577 | 291 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 322 | 6 | Sand | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | | |
| 323 | 45.786717 | -89.585754 | 292 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 323 | 7 | Sand | Pole | SAMPLED | | | 1 | | | | | | | | | | | 1 | | | | | |
| 324 | 45.787214 | -89.5857504 | 303 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 324 | 6 | Sand | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | |
| 325 | 45.788209 | -89.585743 | 315 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 325 | 8 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | |
| 326 | 45.788706 | -89.5857393 | 333 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 326 | 7 | Muck | Pole | SAMPLED | | | 3 | | | | | 2 | | | | | | | 2 | | | | |
| 327 | 45.789203 | -89.5857356 | 346 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 327 | 7 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | | | | | |
| 328 | 45.789701 | -89.5857319 | 359 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 328 | 7 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | 1 | | | | |
| 329 | 45.790198 | -89.5857283 | 371 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 329 | 6 | Muck | Pole | SAMPLED | | | 3 | | | | | 2 | | | | | | | 2 | | | | |
| 330 | 45.790695 | -89.5857246 | 386 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 330 | 6 | Muck | Pole | SAMPLED | | | 3 | | | | | 1 | | | | | | 1 | 1 | | | | |
| 331 | 45.791193 | -89.5857209 | 397 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 331 | 6 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | 1 | | | | |
| 332 | 45.79169 | -89.5857172 | 411 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 332 | 6 | Muck | Pole | SAMPLED | | | 3 | | | | | 2 | | | | 2 | | | | | | | |
| 333 | 45.792187 | -89.5857135 | 434 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 333 | 6 | Muck | Pole | SAMPLED | | | 2 | | | | | 1 | | | | | | | 1 | | | | |
| 334 | 45.792685 | -89.5857098 | 445 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 334 | 5 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | | | | | |
| 335 | 45.793182 | -89.5857062 | 465 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 335 | 5 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | 1 | | | | | |
| 336 | 45.793679 | -89.5857025 | 473 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 336 | 5 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | 1 | 1 | | | | |
| 337 | 45.794176 | -89.5856988 | 491 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 337 | 4 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | |
| 338 | 45.794674 | -89.5856951 | 495 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 338 | 3 | Sand | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | | |
| 339 | 45.775276 | -89.5851281 | 41 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 339 | 4 | Sand | Pole | SAMPLED | | | 2 | | | | | | | | | | | | | | | 2 | |
| 340 | 45.775774 | -89.5851244 | 42 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 340 | 8 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | 1 | | | | | | 1 | | | | | |
| 341 | 45.776271 | -89.5851207 | 59 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 341 | 8 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | | | | 1 | | | | |
| 342 | 45.776768 | -89.585117 | 62 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 342 | 8 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | 1 | | | | | | 1 | 1 | | | | |
| 343 | 45.777266 | -89.5851133 | 77 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 343 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | 1 | | | | | | 1 | 1 | | | | |
| 344 | 45.777763 | -89.5851096 | 82 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 344 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | | | | 1 | | | | |
| 345 | 45.77826 | -89.5851059 | 95 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 345 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | | | 1 | | | | | |
| 346 | 45.778758 | -89.5851023 | 100 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 346 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | 1 | | | | | | 1 | 1 | | | | |
| 347 | 45.779255 | -89.5850986 | 114 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 347 | 10 | Muck | Pole | SAMPLED | | | 2 | | | 2 | | | | | | | | | 1 | | | | |
| 348 | 45.779752 | -89.5850949 | 120 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 348 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | | | | | | | 1 | 1 | | | | |
| 349 | 45.780249 | -89.5850912 | 135 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 349 | 9 | Muck | Pole | SAMPLED | | | 3 | | | | | | | | | | | 3 | 1 | | | | |
| 350 | 45.780747 | -89.5850875 | 144 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 350 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | 1 | | | | | | | 1 | | | | |
| 351 | 45.781244 | -89.5850838 | 161 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 351 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | | | | 1 | | | | |
| 352 | 45.781741 | -89.5850801 | 171 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 352 | 10 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | 1 | | | | |
| 353 | 45.782239 | -89.5850764 | 188 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 353 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | | | | 1 | | | | |
| 354 | 45.782736 | -89.5850727 | 197 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 354 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | | | | 1 | | | | |

| Point Number | Latitude (Decimal Degrees) | Longitude (Decimal Degrees) | ID | Lake Name | County | Date | Field Crew | Point Number | Depth (ft) | Sediment | Pole;Rope | Comments | Notes | Nuisance | Total Rake Fullness | Potamogeton crispus | Brasenia schreberi | Ceratophyllum demersum | Chara spp. | Elodea canadensis | Myriophyllum sibiricum | Nuphar variegata | Nymphaea odorata | Potamogeton amplifolius | Potamogeton richardsonii | Potamogeton robbinsii | Potamogeton zosteriformis | Sagittaria sp. (rosette) | Stuckenia pectinata | Vallisneria americana | Filamentous algae |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 355 | 45.783233 | -89.5850691 | 216 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 355 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | 1 | | | | | | | 2 | | | | | |
| 356 | 45.783731 | -89.5850654 | 225 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 356 | 7 | Rock | Pole | SAMPLED | | | 1 | | | | | | | | | | | 1 | | | | | | |
| 357 | 45.784228 | -89.5850617 | 242 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 357 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | | | | | | | | 3 | | | | | |
| 358 | 45.784725 | -89.585058 | 251 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 358 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | | | | | | | | 3 | | | | | |
| 359 | 45.785222 | -89.5850543 | 268 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 359 | 8 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | | | | | | | | 3 | | | | | |
| 360 | 45.78572 | -89.5850506 | 277 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 360 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | | | | | | | | 1 | | | | | |
| 361 | 45.788206 | -89.5850322 | 316 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 361 | 6 | Muck | Pole | SAMPLED | | | 2 | | | | | 1 | | | | | | | 1 | | | | | |
| 362 | 45.788704 | -89.5850285 | 332 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 362 | 6 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | | | | | | |
| 363 | 45.789201 | -89.5850248 | 347 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 363 | 7 | Muck | Pole | SAMPLED | | | 3 | | | | | 3 | | | | | | | 1 | | | | | |
| 364 | 45.789698 | -89.5850211 | 358 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 364 | 6 | Muck | Pole | SAMPLED | | | 2 | | | | | 1 | | | | | | 1 | 1 | | | | | |
| 365 | 45.790195 | -89.5850174 | 372 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 365 | 7 | Muck | Pole | SAMPLED | | | 1 | | | | | | | | | | | 1 | | | | | | |
| 366 | 45.790693 | -89.5850137 | 385 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 366 | 6 | Muck | Pole | SAMPLED | | | 2 | | | | | 1 | | | | | | 1 | 1 | | | | | |
| 367 | 45.79119 | -89.58501 | 398 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 367 | 6 | Muck | Pole | SAMPLED | | | 2 | | | | | 1 | | | | | | | 1 | | | | | |
| 368 | 45.791687 | -89.5850063 | 410 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 368 | 6 | Muck | Pole | SAMPLED | | | 3 | | | | | 1 | | | | | 2 | | | | | | | |
| 369 | 45.792185 | -89.5850026 | 435 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 369 | 6 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | | | | | | |
| 370 | 45.792682 | -89.5849989 | 444 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 370 | 6 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | 1 | | | | | |
| 371 | 45.793179 | -89.5849952 | 466 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 371 | 5 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | | | | | | |
| 372 | 45.793677 | -89.5849916 | 472 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 372 | 5 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | | |
| 373 | 45.794174 | -89.5849879 | 492 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 373 | 5 | Muck | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | | | |
| 374 | 45.794671 | -89.5849842 | 494 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 374 | 0 | | | TERRESTRIAL | | | | | | | | | | | | | | | | | | | | |
| 375 | 45.776268 | -89.58441 | 60 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 375 | 5 | Sand | Pole | SAMPLED | | | 1 | | | | | | | | | | | 1 | | | | | 1 | |
| 376 | 45.776766 | -89.5844063 | 61 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 376 | 8 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | | | | | 3 | | | 1 | | | | | |
| 377 | 45.777263 | -89.5844026 | 78 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 377 | 8 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | 1 | | | | | | | | |
| 378 | 45.77776 | -89.5843989 | 81 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 378 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | 1 | | | | | | | 3 | | | | | |
| 379 | 45.778258 | -89.5843952 | 96 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 379 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | 1 | | | | | | | 2 | | | | | |
| 380 | 45.778755 | -89.5843915 | 99 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 380 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | | | 1 | 2 | | | | | |
| 381 | 45.779252 | -89.5843878 | 115 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 381 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | | | | 1 | | | | | |
| 382 | 45.77975 | -89.5843841 | 119 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 382 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | | | | 1 | | | | | |
| 383 | 45.780247 | -89.5843804 | 136 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 383 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | | | | | | | | | |
| 384 | 45.780744 | -89.5843768 | 143 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 384 | 10 | Muck | Pole | SAMPLED | | | 1 | | | 1 | | | | | | | | | | | | | | |
| 385 | 45.781241 | -89.5843731 | 162 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 385 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | 1 | | | | | | | 3 | | | | | |
| 386 | 45.781739 | -89.5843694 | 170 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 386 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | | | 1 | 1 | | | | | |
| 387 | 45.782236 | -89.5843657 | 189 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 387 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | 1 | | | | | | | 2 | | | | | |
| 388 | 45.782733 | -89.584362 | 196 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 388 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | 1 | | | | | | | 1 | | | | | |
| 389 | 45.783231 | -89.5843583 | 217 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 389 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | | | | 2 | | | | | |
| 390 | 45.783728 | -89.5843546 | 224 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 390 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | | | | | | | | | |
| 391 | 45.784225 | -89.5843509 | 243 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 391 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | | | | | | | | 3 | | | | | |
| 392 | 45.784723 | -89.5843472 | 250 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 392 | 9 | Muck | Pole | SAMPLED | | | 3 | | | | | | | | | | | | 3 | | | | | |
| 393 | 45.78522 | -89.5843435 | 269 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 393 | 7 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | | | 1 | 1 | | | | | |
| 394 | 45.785717 | -89.5843398 | 276 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 394 | 7 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | | | | | | | | 1 | | | | | |
| 395 | 45.786214 | -89.5843361 | 275 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 395 | 4 | Sand | Pole | SAMPLED | | | 2 | | | | | | | | | | | 1 | | | | | 1 | |
| 396 | 45.788204 | -89.5843213 | 317 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 396 | 5 | Sand | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | | | |
| 397 | 45.788701 | -89.5843176 | 331 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 397 | 5 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | | | | | | |
| 398 | 45.789198 | -89.5843139 | 348 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 398 | 5 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | | | | | | |
| 399 | 45.789696 | -89.5843102 | 357 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 399 | 5 | Muck | Rope | SAMPLED | | | 2 | | | | | 2 | | | | | | | | | | | | |
| 400 | 45.790193 | -89.5843065 | 373 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 400 | 6 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | | |
| 401 | 45.79069 | -89.5843028 | 384 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 401 | 7 | Muck | Pole | SAMPLED | | | 2 | | | | | 1 | | | | | | | 2 | | | | | |
| 402 | 45.791188 | -89.5842991 | 399 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 402 | 6 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | | |
| 403 | 45.791685 | -89.5842954 | 409 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 403 | 6 | Muck | Pole | SAMPLED | | | 3 | | | | | 1 | | | | | | 1 | | | | | 2 | |
| 404 | 45.792182 | -89.5842917 | 436 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 404 | 6 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | 1 | | | | | |
| 405 | 45.792679 | -89.584288 | 443 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 405 | 6 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | 1 | | | | | |
| 406 | 45.793177 | -89.5842843 | 467 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 406 | 5 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | 1 | | | | | |
| 407 | 45.793674 | -89.5842806 | 471 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 407 | 5 | Muck | Pole | SAMPLED | | | 1 | | | | | | | | | | | | 1 | | | | | |
| 408 | 45.794171 | -89.5842769 | 493 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 408 | 4 | Sand | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | | |
| 409 | 45.77726 | -89.5836919 | 79 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 409 | 5 | Sand | Pole | SAMPLED | | | 2 | | | | | | | | | 1 | | 1 | 1 | | | | | |
| 410 | 45.777758 | -89.5836882 | 80 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 410 | 6 | Muck | Pole | SAMPLED | | | 1 | | | | | | | | | | | 1 | | | | | | |
| 411 | 45.778255 | -89.5836845 | 97 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 411 | 5 | Sand | Pole | SAMPLED | | | 3 | | | | | | | | | 1 | | 2 | | | | | 1 | |
| 412 | 45.778752 | -89.5836808 | 98 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 412 | 8 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | | | | | | | | 2 | | | | | |
| 413 | 45.77925 | -89.5836771 | 116 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 413 | 9 | Muck | Pole | SAMPLED | | | 2 | | | 1 | | 1 | | | | 1 | | | | | | | | |

| Point Number | Latitude (Decimal Degrees) | Longitude (Decimal Degrees) | ID | Lake Name | County | Date | Field Crew | Point Number | Depth (ft) | Sediment | Pole;Rope | Comments | Notes | Nuisance | Total Rake Fullness | Potamogeton crispus | Brasenia schreberi | Ceratophyllum demersum | Chara spp. | Elodea canadensis | Myriophyllum sibiricum | Nuphar variegata | Nymphaea odorata | Potamogeton amplifolius | Potamogeton richardsonii | Potamogeton robbinsii | Potamogeton zosteriformis | Sagittaria sp. (rosette) | Stuckenia pectinata | Vallisneria americana | Filamentous algae |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 414 | 45.779747 | -89.5836734 | 118 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 414 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | | | 1 | | | | | |
| 415 | 45.780244 | -89.5836697 | 137 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 415 | 10 | Muck | Pole | SAMPLED | | | 2 | | | 2 | | 1 | | | | | | | | | | | |
| 416 | 45.780742 | -89.583666 | 142 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 416 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | 1 | | | | | | 1 | | | | | |
| 417 | 45.781239 | -89.5836623 | 163 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 417 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | | | | | | | 3 | | | | | |
| 418 | 45.781736 | -89.5836586 | 169 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 418 | 9 | Muck | Pole | SAMPLED | | | 2 | | | 1 | | | | | | | | 1 | | | | | |
| 419 | 45.782233 | -89.5836549 | 190 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 419 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | 3 | | | | | | 1 | | | | | |
| 420 | 45.782731 | -89.5836512 | 195 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 420 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | | | 2 | | | | | |
| 421 | 45.783228 | -89.5836475 | 218 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 421 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | | | 1 | | | | | |
| 422 | 45.783725 | -89.5836438 | 223 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 422 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | | | | | | | 3 | | | | | |
| 423 | 45.784223 | -89.5836401 | 244 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 423 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | | | | | | | 3 | | | | | |
| 424 | 45.78472 | -89.5836364 | 249 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 424 | 8 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | 1 | | | | | | 1 | | | | | |
| 425 | 45.785217 | -89.5836327 | 270 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 425 | 8 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | | | | | | | 3 | | | | | |
| 426 | 45.785715 | -89.583629 | 273 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 426 | 7 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | | 1 | 1 | | | | | |
| 427 | 45.786212 | -89.5836253 | 274 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 427 | 7 | Sand | Pole | SAMPLED | | | 2 | | | 1 | | | | | | | 2 | 1 | | | | | |
| 428 | 45.788201 | -89.5836105 | 318 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 428 | 5 | Sand | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | | |
| 429 | 45.788698 | -89.5836068 | 330 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 429 | 5 | Muck | Pole | SAMPLED | | | 3 | | | | | 2 | | | | | | 1 | | | | | |
| 430 | 45.789196 | -89.5836031 | 349 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 430 | 5 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | | | | | |
| 431 | 45.789693 | -89.5835994 | 356 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 431 | 6 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | | | | | | |
| 432 | 45.79019 | -89.5835957 | 374 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 432 | 6 | Muck | Pole | SAMPLED | | | 1 | | | | | | | | | | | 1 | | | | | |
| 433 | 45.790688 | -89.583592 | 383 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 433 | 7 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | |
| 434 | 45.791185 | -89.5835883 | 400 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 434 | 5 | Muck | Pole | SAMPLED | | | 1 | | | | | | | | | | | 1 | 1 | | | | | |
| 435 | 45.791682 | -89.5835846 | 408 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 435 | 5 | Muck | Pole | SAMPLED | | | 2 | | | | | 1 | | | | | | | 2 | | | | |
| 436 | 45.79218 | -89.5835808 | 437 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 436 | 5 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | |
| 437 | 45.792677 | -89.5835771 | 442 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 437 | 6 | Muck | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | | |
| 438 | 45.793174 | -89.5835734 | 468 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 438 | 5 | Muck | Pole | SAMPLED | | | 1 | | | | | | | | | | | | 1 | | | | |
| 439 | 45.793671 | -89.5835697 | 470 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 439 | 5 | Muck | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | | |
| 440 | 45.779744 | -89.5829627 | 117 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 440 | 5 | Sand | Pole | SAMPLED | | | 3 | | | | | | | | | | | | 3 | | | | |
| 441 | 45.780242 | -89.582959 | 138 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 441 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | 1 | | | | | | | 3 | | | | |
| 442 | 45.780739 | -89.5829553 | 141 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 442 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | 1 | | | | | | 1 | 2 | | | | |
| 443 | 45.781236 | -89.5829516 | 164 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 443 | 9 | Muck | Pole | SAMPLED | | | 2 | | | | | | | | | | | | 2 | | | | |
| 444 | 45.781734 | -89.5829478 | 168 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 444 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | | | | | | | | |
| 445 | 45.782231 | -89.5829441 | 191 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 445 | 10 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | | | | | | | | 2 | | | | |
| 446 | 45.782728 | -89.5829404 | 194 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 446 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | | | | | | | | 2 | | | | |
| 447 | 45.783225 | -89.5829367 | 219 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 447 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | | | | | | | | 3 | | | | |
| 448 | 45.783723 | -89.582933 | 222 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 448 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | 1 | | | | | | | 1 | | | | |
| 449 | 45.78422 | -89.5829293 | 245 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 449 | 9 | Muck | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | | |
| 450 | 45.784717 | -89.5829256 | 248 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 450 | 7 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | | | 1 | | | | | |
| 451 | 45.785215 | -89.5829219 | 271 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 451 | 9 | Muck | Pole | SAMPLED | | | 3 | | | 3 | | | | | | | | 1 | | | | | |
| 452 | 45.785712 | -89.5829182 | 272 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 452 | 8 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | | | | | | | 2 | 1 | | | | |
| 453 | 45.787701 | -89.5829033 | 325 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 453 | 2 | Sand | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | |
| 454 | 45.788199 | -89.5828996 | 319 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 454 | 5 | Sand | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | |
| 455 | 45.788696 | -89.5828959 | 329 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 455 | 5 | Muck | Pole | SAMPLED | | | 1 | | | | | | | | | | | 1 | | | | | |
| 456 | 45.789193 | -89.5828922 | 350 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 456 | 0 | | | TERRESTRIAL | | | | | | | | | | | | | | | | | | | |
| 457 | 45.790188 | -89.5828848 | 375 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 457 | 3 | Rock | Pole | SAMPLED | | | 1 | | | | | | | | | | | | | | | 1 | |
| 458 | 45.790685 | -89.5828811 | 382 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 458 | 6 | Muck | Pole | SAMPLED | | | 2 | | | | | 1 | | | | | | | 1 | | | | |
| 459 | 45.791182 | -89.5828774 | 401 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 459 | 6 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | 1 | | | | |
| 460 | 45.79168 | -89.5828737 | 407 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 460 | 6 | Muck | Pole | SAMPLED | | | 2 | | | | | 1 | | | | | | | 2 | | | | |
| 461 | 45.792177 | -89.58287 | 438 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 461 | 5 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | |
| 462 | 45.792674 | -89.5828662 | 441 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 462 | 6 | Muck | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | | |
| 463 | 45.793172 | -89.5828625 | 469 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 463 | 4 | Sand | Pole | SAMPLED | | | 0 | | | | | | | | | | | | | | | | |
| 464 | 45.780239 | -89.5822482 | 139 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 464 | 5 | Sand | Pole | SAMPLED | | | 2 | | | | | | V | | | | | 2 | | | | | |
| 465 | 45.780736 | -89.5822445 | 140 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 465 | 8 | Muck | Pole | SAMPLED | | | 2 | | | | | | | | | | | 2 | 1 | | | | |
| 466 | 45.781234 | -89.5822408 | 165 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 466 | 8 | Muck | Pole | SAMPLED | | | 3 | | | 1 | | | | | | | | | 3 | | | | |
| 467 | 45.781731 | -89.5822371 | 167 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 467 | 8 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | | | | | | | | 3 | | | | |
| 468 | 45.782228 | -89.5822334 | 192 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 468 | 9 | Muck | Pole | SAMPLED | | | 2 | | | 1 | | | | | | | | | 1 | | | | |
| 469 | 45.782726 | -89.5822297 | 193 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 469 | 8 | Muck | Pole | SAMPLED | | | 3 | | | 2 | | 1 | | | | | | | 2 | | | | |
| 470 | 45.783223 | -89.5822259 | 220 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 470 | 4 | Sand | Pole | SAMPLED | | | 2 | | | | | | | | | | | | | | | 2 | |
| 471 | 45.78372 | -89.5822222 | 221 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 471 | 4 | Muck | Pole | SAMPLED | | | 2 | | | 1 | | | | | | | | | 1 | | | 1 | |
| 472 | 45.784218 | -89.5822185 | 246 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 472 | 7 | Muck | Pole | SAMPLED | | | 1 | | | | | | | | | | | 1 | | | | | |

| Point Number | Latitude (Decimal Degrees) | Longitude (Decimal Degrees) | ID | Lake Name | County | Date | Field Crew | Point Number | Depth (ft) | Sediment | Pole;Rope | Comments | Notes | Nuisance | Total Rake Fullness | Potamogeton crispus | Brasenia schreberi | Ceratophyllum demersum | Chara spp. | Elodea canadensis | Myriophyllum sibiricum | Nuphar variegata | Nymphaea odorata | Potamogeton amplifolius | Potamogeton richardsonii | Potamogeton robbinsii | Potamogeton zosteriformis | Sagittaria sp. (rosette) | Stuckenia pectinata | Vallisneria americana | Filamentous algae |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 473 | 45.784715 | -89.5822148 | 247 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 473 | 5 | Sand | Pole | SAMPLED | | | 2 | | | | | | | | | | | 2 | | | | 1 | |
| 474 | 45.787699 | -89.5821925 | 324 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 474 | 4 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | 1 | | | | | 1 | | | | |
| 475 | 45.788196 | -89.5821888 | 320 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 475 | 6 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | |
| 476 | 45.788693 | -89.5821851 | 328 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 476 | 0 | | | SHALLOW | | | | | | | | | | | | | | | | | | | |
| 477 | 45.789688 | -89.5821776 | 355 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 477 | 4 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | 1 | | | | | |
| 478 | 45.790185 | -89.5821739 | 376 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 478 | 5 | Muck | Pole | SAMPLED | | | 2 | | | | | 1 | | | | | | 1 | 2 | | | | |
| 479 | 45.790682 | -89.5821702 | 381 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 479 | 6 | Muck | Pole | SAMPLED | | | 3 | | | | | 3 | | | | | | | | | | | |
| 480 | 45.79118 | -89.5821665 | 402 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 480 | 5 | Muck | Pole | SAMPLED | | | 3 | | | | | 2 | | | | | | | 2 | | | | |
| 481 | 45.791677 | -89.5821628 | 406 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 481 | 5 | Muck | Pole | SAMPLED | | | 1 | | | | | | | | | | | | 1 | | | | |
| 482 | 45.792174 | -89.5821591 | 439 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 482 | 5 | Sand | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | |
| 483 | 45.792672 | -89.5821554 | 440 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 483 | 0 | | | TERRESTRIAL | | | | | | | | | | | | | | | | | | | |
| 484 | 45.781231 | -89.5815301 | 166 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 484 | 4 | Sand | Pole | SAMPLED | | | 2 | | | | | | | | | | | | | | | 2 | |
| 485 | 45.787696 | -89.5814817 | 323 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 485 | 3 | Muck | Pole | SAMPLED | | | 2 | | | | | 2 | | | | | | 1 | | | | | |
| 486 | 45.788193 | -89.581478 | 321 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 486 | 5 | Muck | Pole | SAMPLED | | | 1 | | | | | | | | | | 1 | 1 | | | | | |
| 487 | 45.788691 | -89.5814742 | 327 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 487 | 5 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | 1 | | 1 | 1 | | | | |
| 488 | 45.789188 | -89.5814705 | 351 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 488 | 4 | Muck | Pole | SAMPLED | 7/19/2017 | | 1 | | | | | 1 | | | | | | 1 | | | | | |
| 489 | 45.789685 | -89.5814668 | 354 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 489 | 5 | Muck | Pole | SAMPLED | | | 1 | | | | | | 1 | | | | | | | | | | |
| 490 | 45.790183 | -89.5814631 | 377 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 490 | 5 | Muck | Pole | SAMPLED | | | 1 | | | | | | | | | | | | 1 | | | | |
| 491 | 45.79068 | -89.5814593 | 380 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 491 | 5 | Muck | Pole | SAMPLED | | | 2 | | | | | 1 | | | | | | | 1 | | | 1 | |
| 492 | 45.791177 | -89.5814556 | 403 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 492 | 5 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | |
| 493 | 45.791674 | -89.5814519 | 405 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 493 | 3 | Sand | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | |
| 494 | 45.788191 | -89.5807671 | 322 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 494 | 4 | Muck | Pole | SAMPLED | | | 1 | | | | | | | | | | | | | | 1 | | |
| 495 | 45.788688 | -89.5807634 | 326 | Horsehead Lake | Oneida | 7/18/2017 | EJH & CJF | 495 | 4 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | |
| 496 | 45.789185 | -89.5807597 | 352 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 496 | 4 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | |
| 497 | 45.789683 | -89.5807559 | 353 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 497 | 5 | Muck | Pole | SAMPLED | | | 1 | | | | | | | | | | | 1 | | | | | |
| 498 | 45.79018 | -89.5807522 | 378 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 498 | 5 | Muck | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | |
| 499 | 45.790677 | -89.5807485 | 379 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 499 | 4 | Muck | Pole | SAMPLED | | | 1 | | | | | | 1 | | | | | | | | | | |
| 500 | 45.791175 | -89.5807447 | 404 | Horsehead Lake | Oneida | 7/19/2017 | EJH & CJF | 500 | 3 | Sand | Pole | SAMPLED | | | 1 | | | | | 1 | | | | | | | | | | | |