A

APPENDIX A

Public Participation Materials

Presentation Outline

- **Lake Management Planning Project Overview**
- **Study Results**
  - Water Quality
  - Watershed
  - Aquatic Plants
  - Fishery
- **"Big Picture"**

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Study and Plan Goals

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

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3

Water Quality

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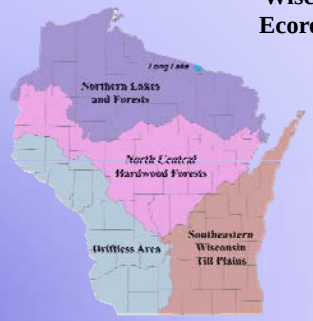
4

Wisconsin Ecoregions



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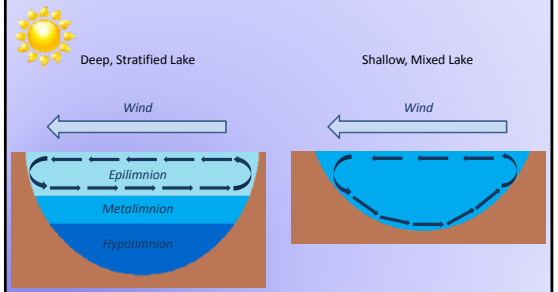
Wisconsin Lakes Classification



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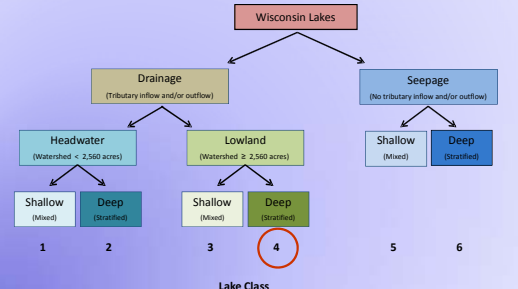
Wisconsin Lakes Classification



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Water Quality

- Phosphorus (Limiting Plant Nutrient)
  - Nitrogen:Phosphorus = 25:1
- Chlorophyll-*a* (Algal Abundance)
  - Low abundance
  - Minor seasonal variation
- Water Clarity (Secchi Disk)
  - High Water Clarity
  - Increased over last decade

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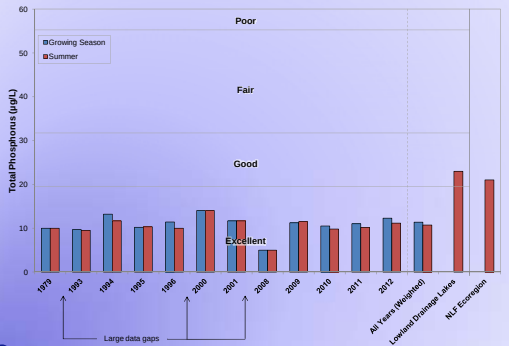
Average Annual Total Phosphorus



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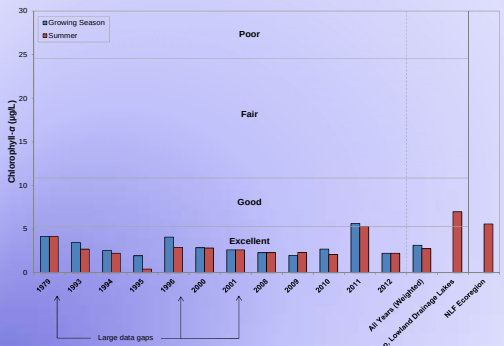
Average Annual Chlorophyll-α



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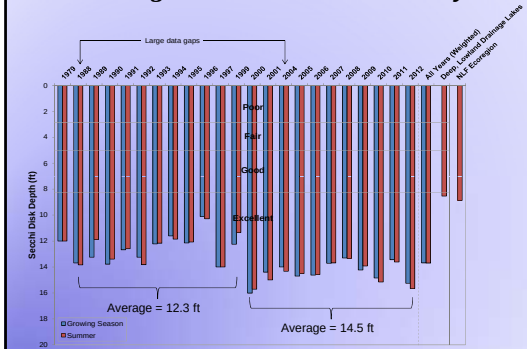
Average Annual Secchi Disk Clarity



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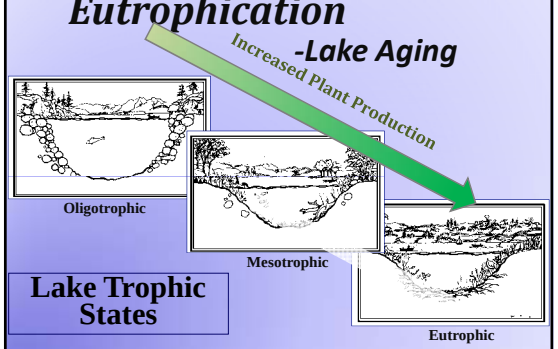
Eutrophication -Lake Aging



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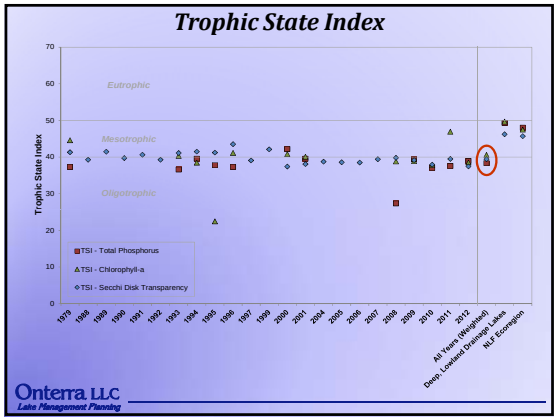
Trophic State Index
Eutrophic
Mesotrophic
Oligotrophic
Trophic State Index
TSI - Total Phosphorus
TSI - Chlorophyll-a
TSI - Secchi Disk Transparency
All Years (Weighted)
Deep, Lowland Drainage Lakes
NLF Ecoregion
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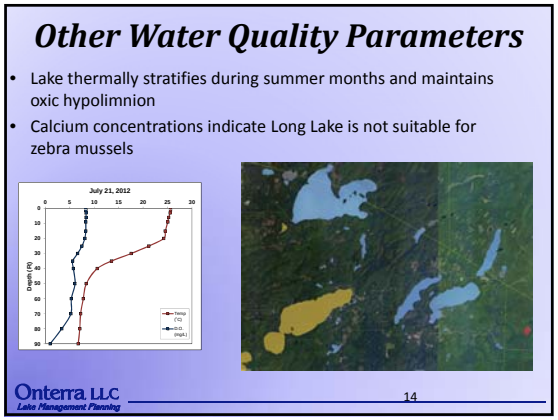
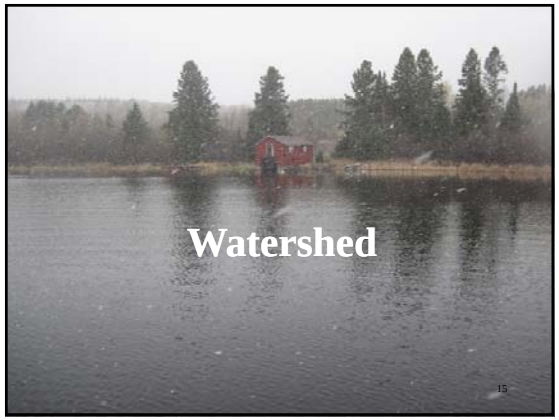
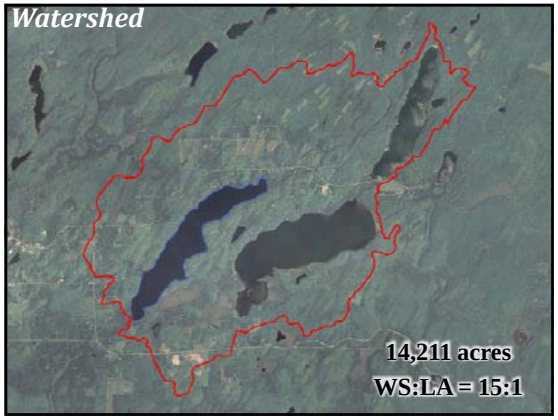
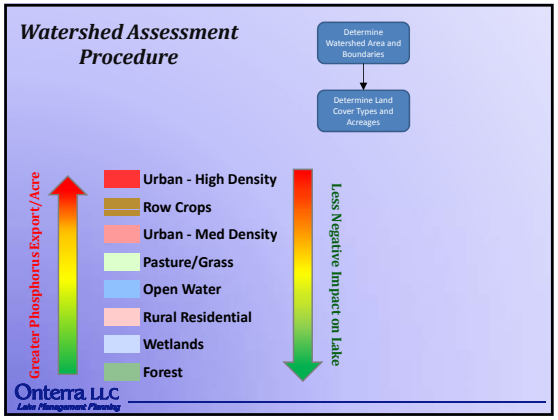

Other Water Quality Parameters
• Lake thermally stratifies during summer months and maintains oxic hypolimnion
• Calcium concentrations indicate Long Lake is not suitable for zebra mussels
July 21, 2012
Depth (ft)
Onterra LLC
Lake Management Planning
14


Watershed
15


Watershed
14,211 acres
WS:LA = 15:1


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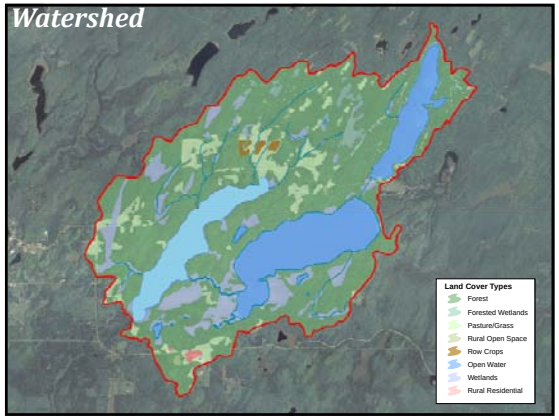
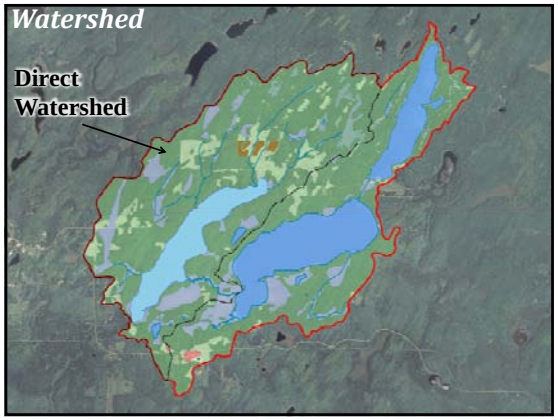
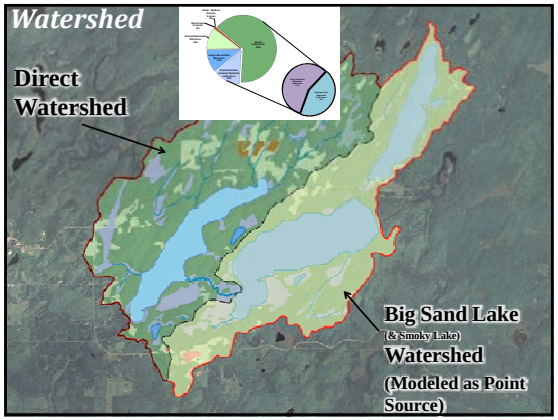
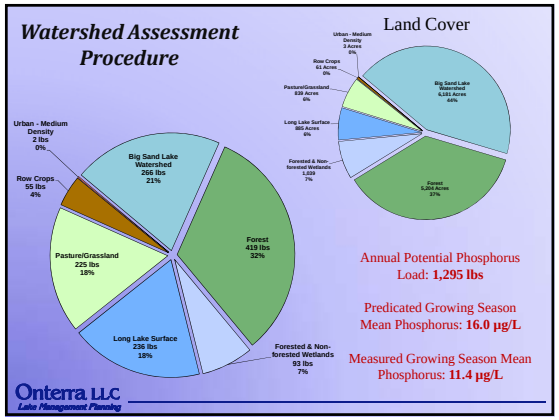

Watershed
Land Cover Types
Forest
Forested Wetlands
Pasture/Grass
Rural Open Space
Row Crops
Open Water
Wetlands
Rural Residential


Watershed
Direct Watershed


Watershed
Direct Watershed
Big Sand Lake
(& Smoky Lake)
Watershed
(Modeled as Point Source)


Watershed Assessment Procedure
Land Cover
Urban - Medium Density 2 lbs 0%
Row Crops 55 lbs 4%
Pasture/Grassland 225 lbs 18%
Big Sand Lake Watershed 266 lbs 21%
Forest 419 lbs 32%
Long Lake Surface 236 lbs 18%
Forested & Non-forested Wetlands 93 lbs 7%
Annual Potential Phosphorus Load: 1,295 lbs
Predicated Growing Season Mean Phosphorus: 16.0 µg/L
Measured Growing Season Mean Phosphorus: 11.4 µg/L
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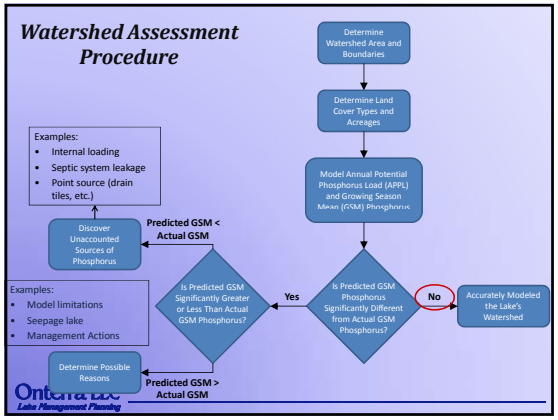
Watershed Assessment Procedure
Determine Watershed Area and Boundaries
Determine Land Cover Types and Acreages
Model Annual Potential Phosphorus Load (APPL) and Growing Season Mean (GSM) Phosphorus
Is Predicted GSM Phosphorus Significantly Different from Actual GSM Phosphorus?
No
Accurately Modeled the Lake's Watershed
Yes
Is Predicted GSM Significantly Greater or Less Than Actual GSM Phosphorus?
Predicted GSM < Actual GSM
Discover Unaccounted Sources of Phosphorus
Examples:
Internal loading
Septic system leakage
Point source (drain tiles, etc.)
Predicted GSM > Actual GSM
Determine Possible Reasons
Examples:
Model limitations
Seepage lake
Management Actions
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Shoreland Assessment
Shoreland area is important for buffering runoff and provides valuable habitat for aquatic and terrestrial wildlife.
It does not look at lake shoreline on a property-by-property basis.
Assessment ranks shoreland area from shoreline back 35 feet
Urbanized
Range
Natural
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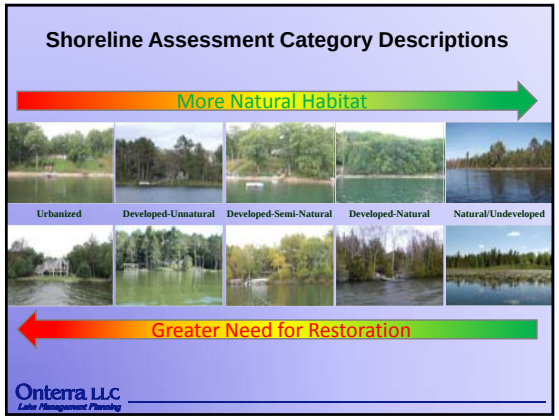
Shoreline Assessment Category Descriptions
More Natural Habitat
Urbanized
Developed-Unnatural
Developed-Semi-Natural
Developed-Natural
Natural/Undeveloped
Greater Need for Restoration
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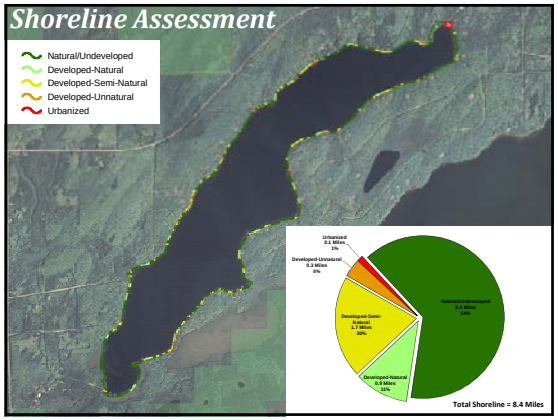
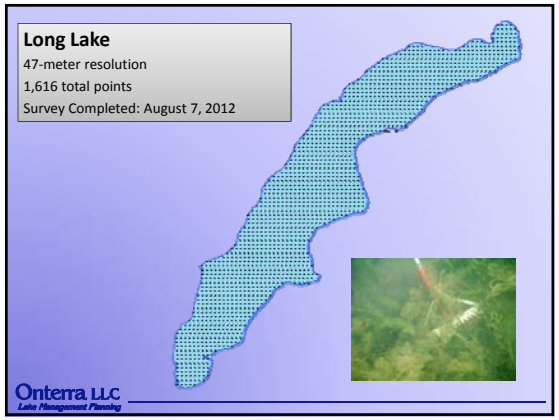

Shoreline Assessment
Natural/Undeveloped
Developed-Natural
Developed-Semi-Natural
Developed-Unnatural
Urbanized
Total Shoreline = 8.4 Miles


Aquatic Plants


Long Lake
47-meter resolution
1,616 total points
Survey Completed: August 7, 2012
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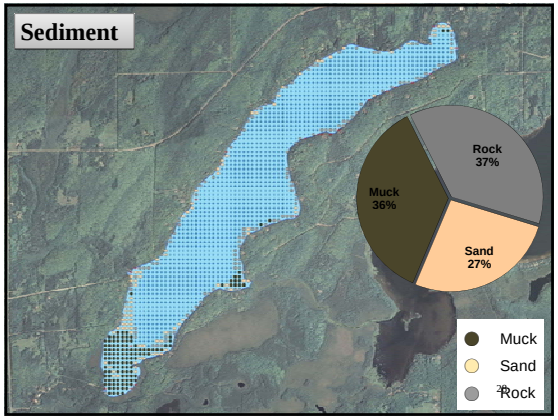
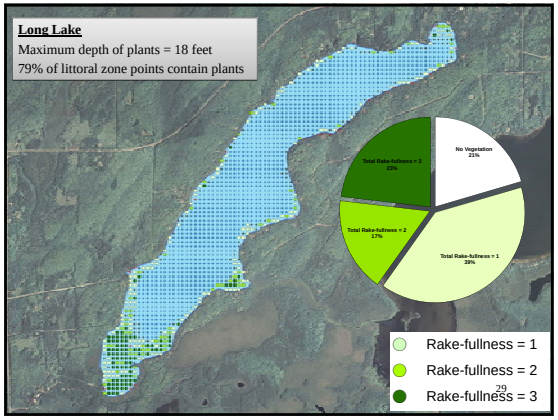
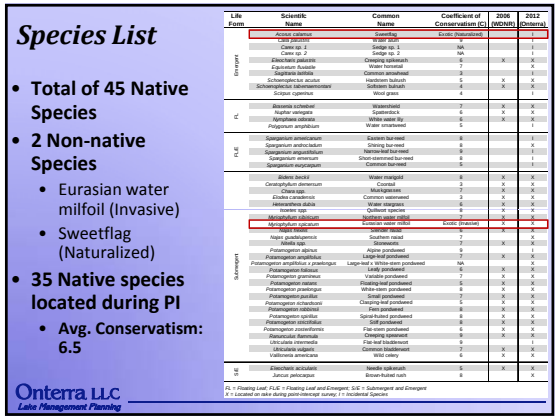

Sediment
Rock 37%
Muck 36%
Sand 27%
Muck
Sand
Rock


Long Lake
Maximum depth of plants = 18 feet
79% of littoral zone points contain plants
No Vegetation 21%
Total Rake-fullness = 1 39%
Total Rake-fullness = 2 17%
Total Rake-fullness = 3 23%
Rake-fullness = 1
Rake-fullness = 2
Rake-fullness = 3


Species List
Total of 45 Native Species
2 Non-native Species
Eurasian water milfoil (Invasive)
Sweetflag (Naturalized)
35 Native species located during PI
Avg. Conservatism: 6.5
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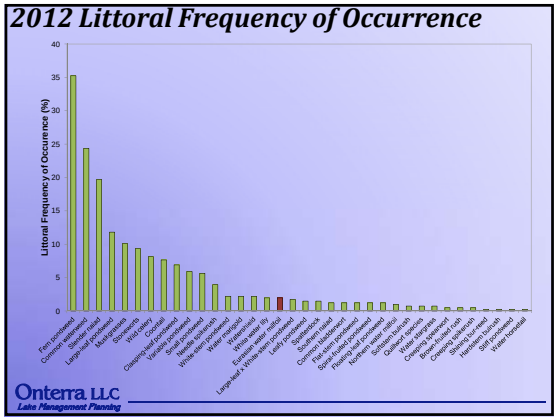
Lake Management Planning


2012 Littoral Frequency of Occurrence
Littoral Frequency of Occurence (%)
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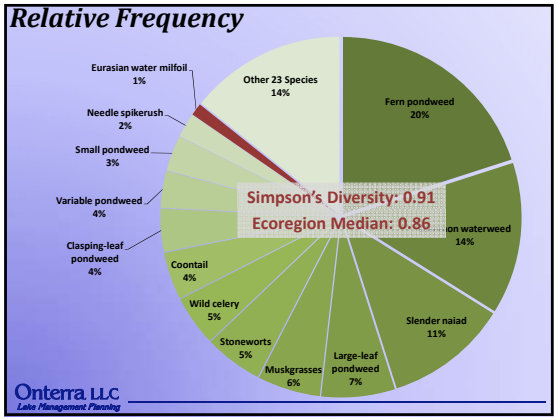
Lake Management Planning


Relative Frequency
Eurasian water milfoil 1%
Other 23 Species 14%
Needle spikerush 2%
Fern pondweed 20%
Small pondweed 3%
Variable pondweed 4%
Simpson's Diversity: 0.91
Ecoregion Median: 0.86
Clasping-leaf pondweed 4%
Coontail 4%
Wild celery 5%
Stoneworts 5%
Muskgrasses 6%
Large-leaf pondweed 7%
Slender naiad 11%
14%
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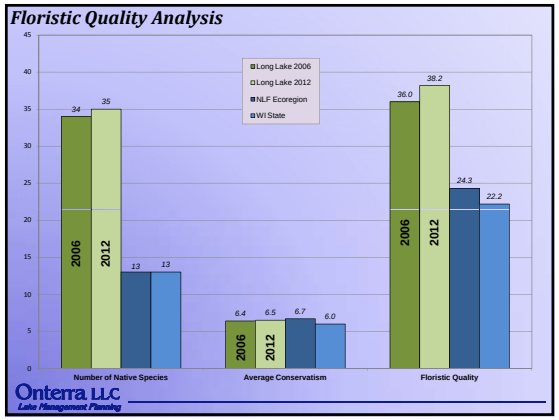
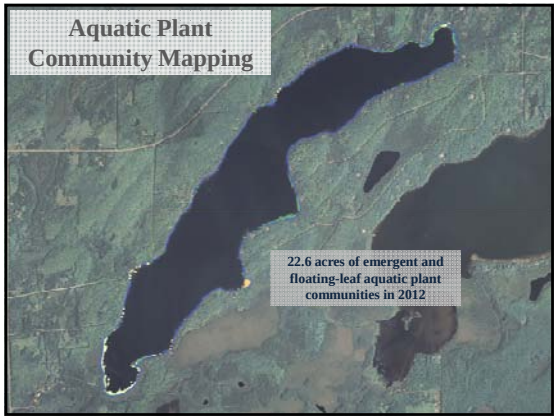
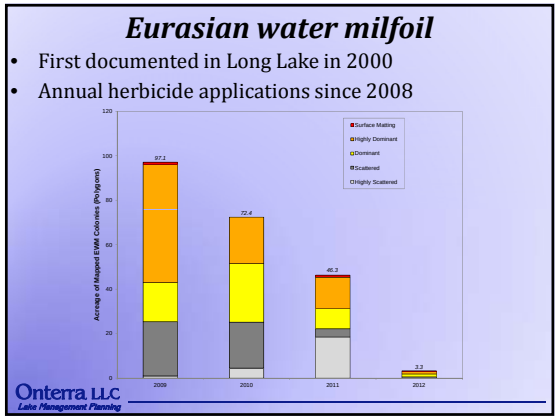
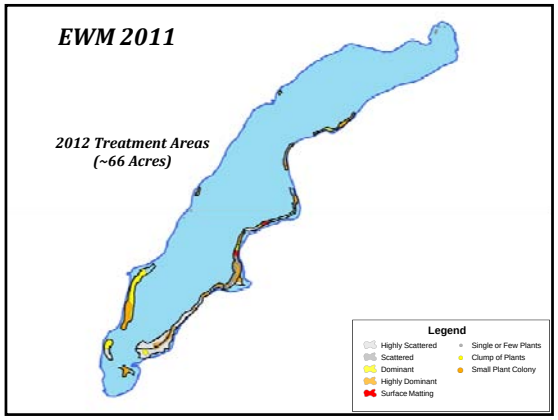
Lake Management Planning

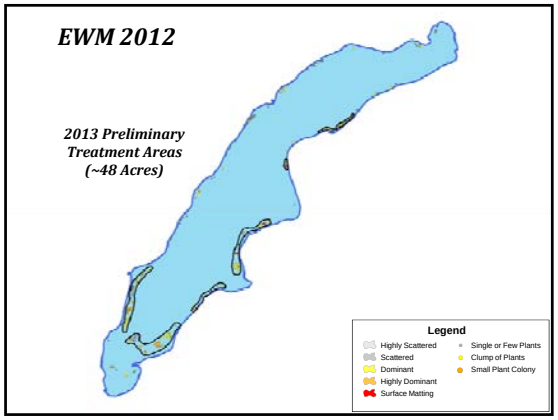

Floristic Quality Analysis
Long Lake 2006
Long Lake 2012
NLF Ecoregion
WI State
2006
2012
Number of Native Species
Average Conservatism
Floristic Quality
Onterra LLC
Lake Management Planning

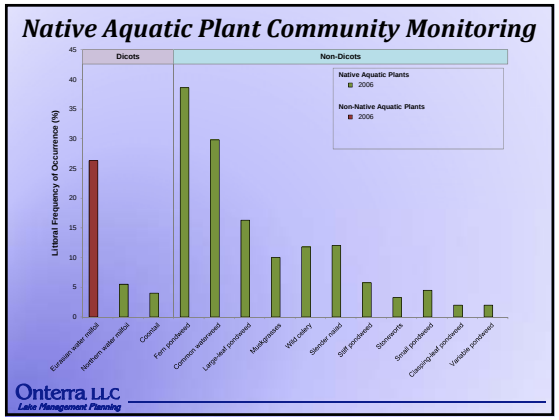

Aquatic Plant Community Mapping
22.6 acres of emergent and floating-leaf aquatic plant communities in 2012

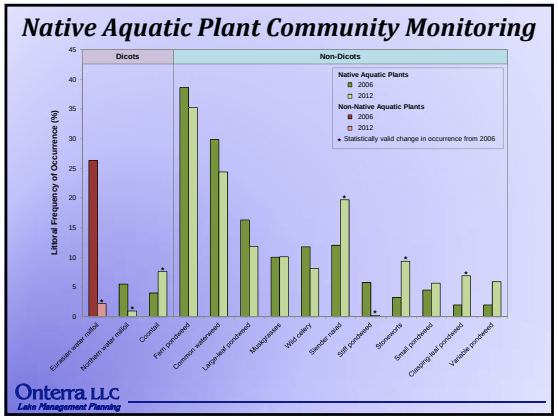

Non-native Plants in Long Lake: Eurasian water milfoil
Onterra LLC


Eurasian water milfoil
First documented in Long Lake in 2000
Annual herbicide applications since 2008
Surface Matting
Highly Dominant
Dominant
Scattered
Highly Scattered
Onterra LLC
Lake Management Planning


EWM 2011
2012 Treatment Areas
(~66 Acres)
Legend
Highly Scattered
Scattered
Dominant
Highly Dominant
Surface Matting
Single or Few Plants
Clump of Plants
Small Plant Colony


EWM 2012
2013 Preliminary
Treatment Areas
(~48 Acres)
Legend
Highly Scattered
Scattered
Dominant
Highly Dominant
Surface Matting
Single or Few Plants
Clump of Plants
Small Plant Colony


Native Aquatic Plant Community Monitoring
Dicots
Non-Dicots
Native Aquatic Plants
2006
Non-Native Aquatic Plants
2006
Littoral Frequency of Occurrence (%)
Eurasian water milfoil
Northern water milfoil
Coontail
Fern pondweed
Common waterweed
Large-leaf pondweed
Muskgrasses
Wild celery
Slender naiad
Stiff pondweed
Stoneworts
Small pondweed
Clasping-leaf pondweed
Variable pondweed
Onterra LLC
Lake Management Planning


Native Aquatic Plant Community Monitoring
Dicots
Non-Dicots
Native Aquatic Plants
2006
2012
Non-Native Aquatic Plants
2006
2012
* Statistically valid change in occurrence from 2006
Littoral Frequency of Occurrence (%)
Eurasian water milfoil
Northern water milfoil
Coontail
Fern pondweed
Common waterweed
Large-leaf pondweed
Muskgrasses
Wild celery
Slender naiad
Stiff pondweed
Stoneworts
Small pondweed
Clasping-leaf pondweed
Variable pondweed
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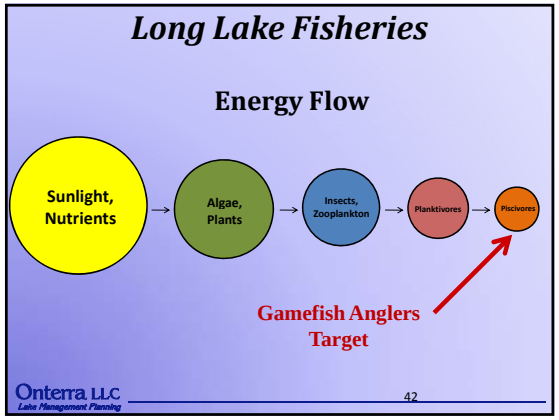
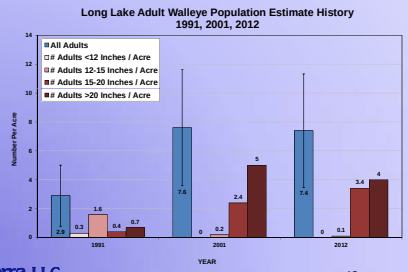
Fisheries
41


Long Lake Fisheries
Energy Flow
Sunlight, Nutrients
Algae, Plants
Insects, Zooplankton
Planktivores
Piscivores
Gamefish Anglers Target
Onterra LLC
Lake Management Planning
42

Long Lake Fisheries

- 2012 Survey: 6,472 adult walleye, or 7.4 per acre
- 75% of adults we of legal size, >18 inches



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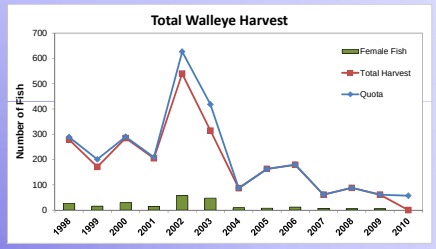
Long Fisheries

Onterra LLC Lake Management Planning 44

Long Lake Fisheries

Walleye Spear Harvest



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Conclusions

- Water quality is excellent
  - Low phosphorus, low algae, high water clarity
  - Increased water clarity over recent decade likely due to decreased precipitation
- Overall, watershed is in great condition
  - Land cover exports minimal phosphorus
  - Shoreland habitat mostly natural
- Aquatic plant community
  - Based upon standard analysis, native community is of high quality
  - Plant community contains a high number of native species and as high species diversity
  - Plant community has maintained quality over the course of EWM control program
  - EWM occurrence has decreased by 92% lake-wide since 2006

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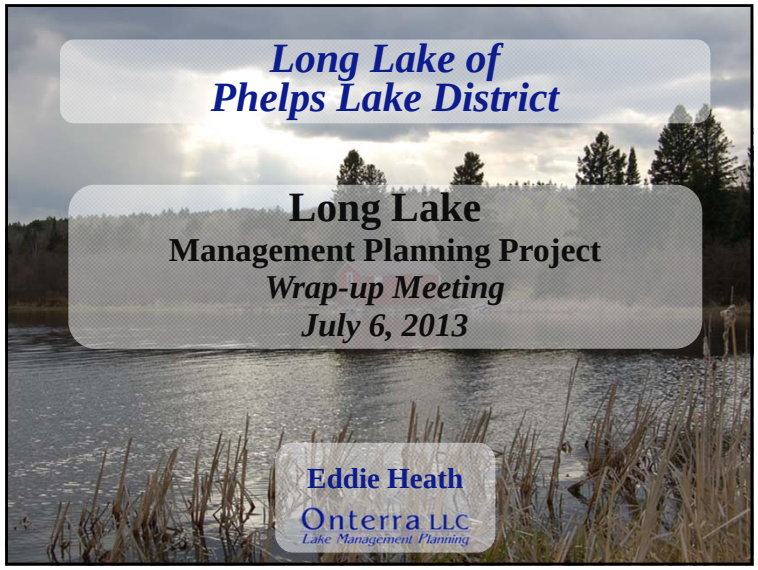
Thank You

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

Wisconsin Lakes Partnership

Onterra LLC Lake Management Planning 48



Onterra, LLC

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

Onterra LLC
Lake Management Planning

Study and Plan Goals

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

Onterra LLC
Lake Management Planning

Conclusions

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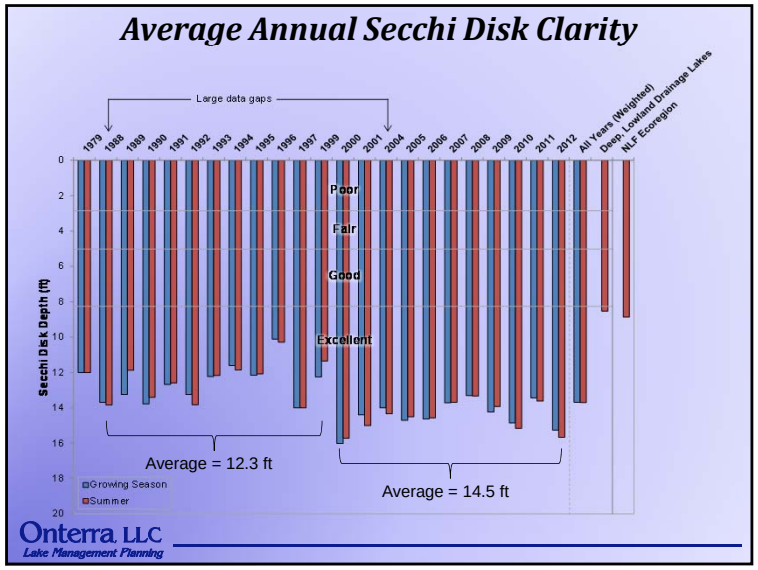
  - Low phosphorus, low algae, high water clarity
  - Increased water clarity over recent decade likely due to decreased precipitation

Onterra LLC
Lake Management Planning



Conclusions

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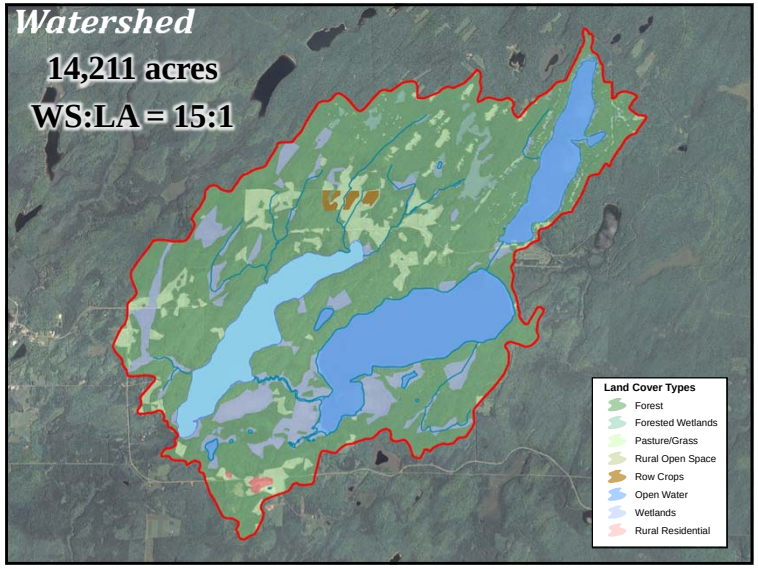
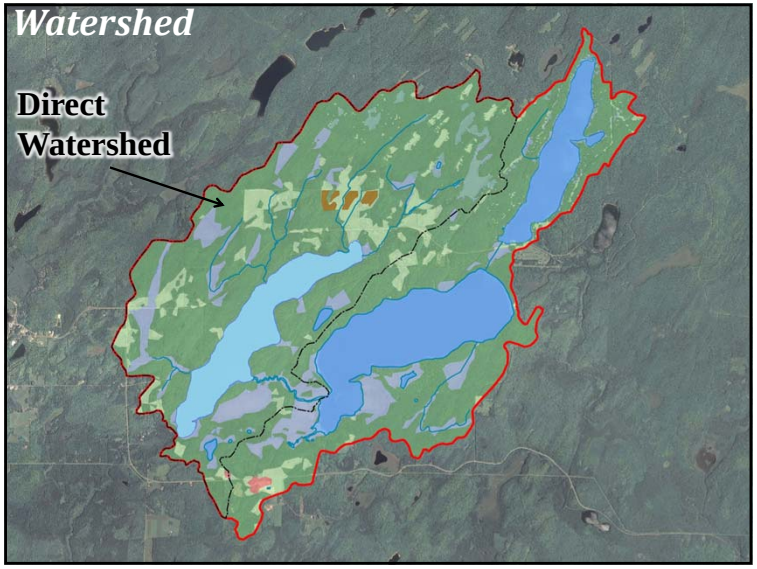
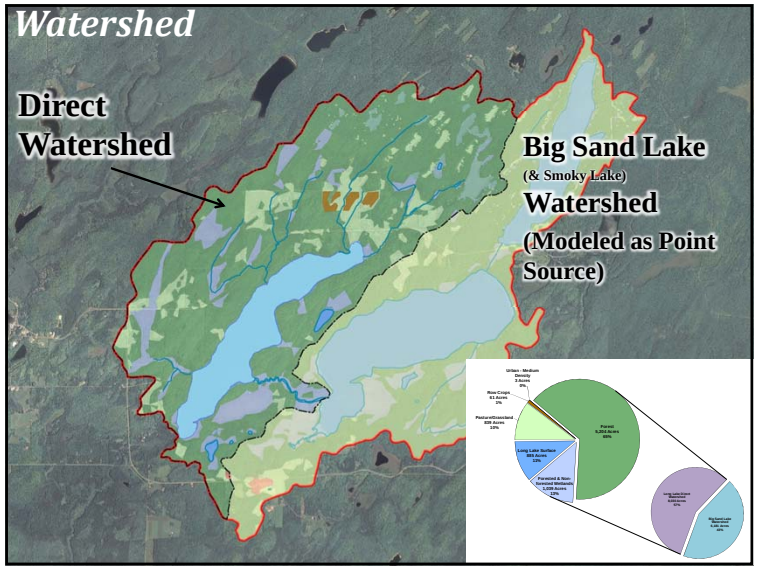
Onterra LLC
Lake Management Planning







Conclusions

- Water quality is excellent
  - Low phosphorus, low algae, high water clarity
  - Increased water clarity over recent decade likely due to decreased precipitation
- Overall, watershed is in great condition
  - Land cover exports minimal phosphorus
  - Shoreland habitat mostly natural

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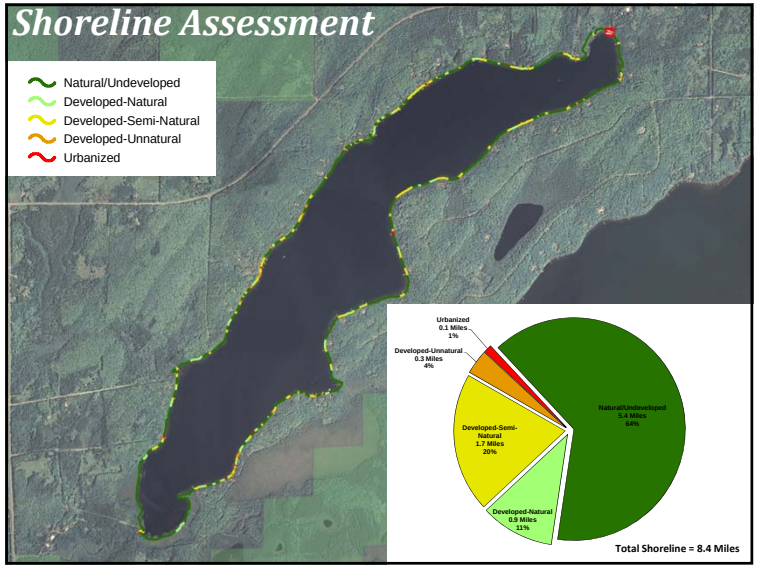

Management Goal:
Maintain Current Water Quality Conditions

Management Actions

1. **Monitor water quality through WDNR Citizens Lake Monitoring Network.**
   Continuation of current effort

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Conclusions

- Water quality is excellent
  - Low phosphorus, low algae, high water clarity
  - Increased water clarity over recent decade likely due to decreased precipitation
- Overall, watershed is in great condition
  - Land cover exports minimal phosphorus
  - Shoreland habitat mostly natural
- Aquatic plant community
  - Based upon standard analysis, native community is of high quality
  - Plant community contains a high number of native species and as high species diversity
  - Plant community has maintained quality over the course of EWM control program

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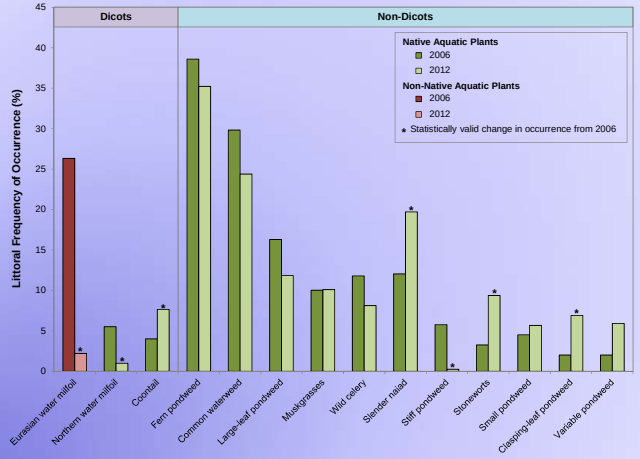
Native Aquatic Plant Community Monitoring



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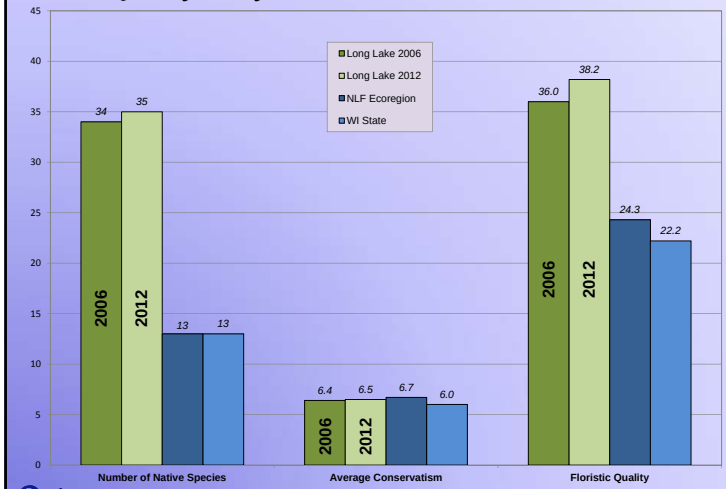
Floristic Quality Analysis



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Conclusions

- Water quality is excellent
  - Low phosphorus, low algae, high water clarity
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- Overall, watershed is in great condition
  - Land cover exports minimal phosphorus
  - Shoreland habitat mostly natural
- Aquatic plant community
  - Based upon standard analysis, native community is of high quality
  - Plant community contains a high number of native species and as high species diversity
  - Plant community has maintained quality over the course of EWM control program
  - EWM occurrence has decreased by 92% lake-wide since 2006

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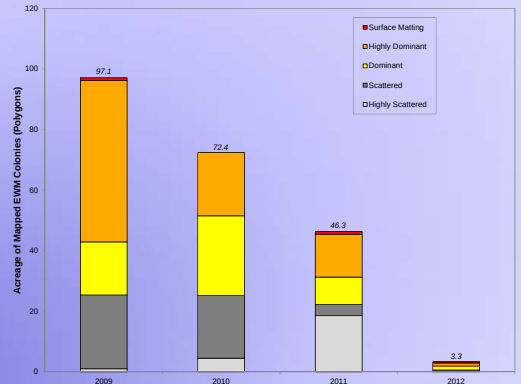
Eurasian water milfoil

- First documented in Long Lake in 2000
- Professionally-coordinated annual herbicide program started in 2008



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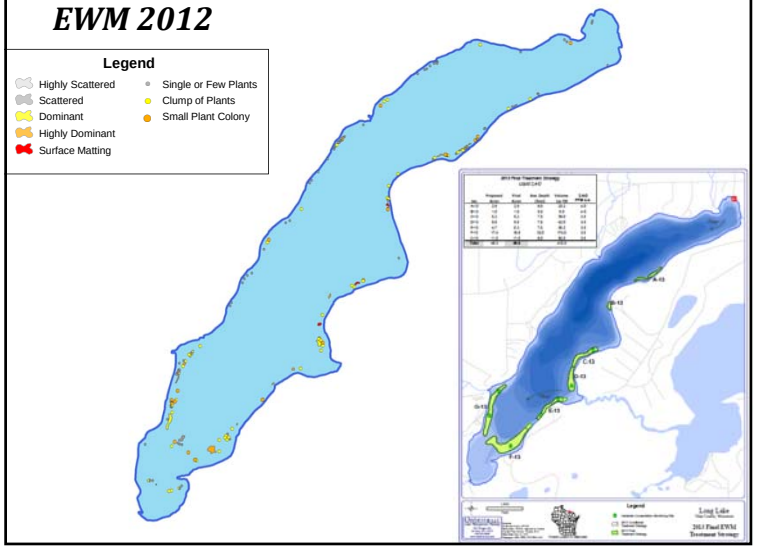
EWM 2012



Management Goal:
Control Existing and Prevent Further Aquatic Invasive Species Infestations within Long Lake

Management Actions

1. **Continue implementation of an herbicide application strategy to control Eurasian water milfoil infestation on Long Lake.**
   - *Continuation of current effort*
   - *Recently awarded 5-year grant*
   - *Aggressive approach – all colonized EWM will be targeted for herbicide treatment*
   - *Ongoing monitoring to determine efficacy and selectivity*

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Management Goal:
Control Existing and Prevent Further Aquatic Invasive Species Infestations within Long Lake

Management Actions

1. **Continue implementation of an herbicide application strategy to control Eurasian water milfoil infestation on Long Lake.**
2. **Continue Clean Boats Clean Waters watercraft inspections at Long Lake public access location.**
   - *200 hours of paid inspectors each year*
3. **Enhance volunteer Eurasian water milfoil surveillance monitoring and hand removal program.**
   - *Basemaps on district-owned GPS*
   - *2-year trial of paid hand-removal program (~100 hrs/yr)*

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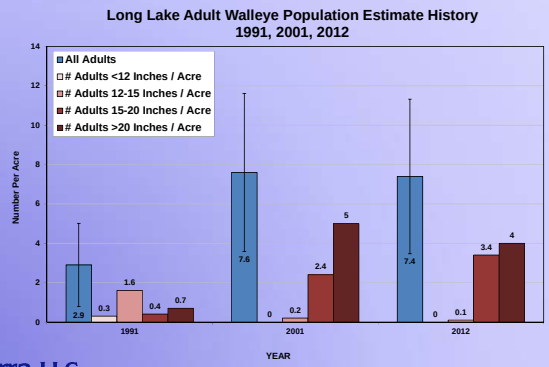
Long Lake Fisheries

- **2012 Survey: 6,472 adult walleye, or 7.4 per acre**
- **75% of adults we of legal size, >18 inches**



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Management Goal:
Improve Fishery Resource and Fishing

Management Actions

1. **Continue to work with fisheries managers to enhance the overall fishery on Long Lake**
   Continuation of current effort
   Identified primary fisheries-related issues
   - Continue the walleye stocking program
   - Increase walleye recruitment within the lake
   - Sustain a two-tiered fishery on the lake
   - Limit the impact that rainbow smelt have on the Long Lake ecosystem

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Management Goal:
Increase LLPLD's Capacity to Communicate with Lake Stakeholders and Facilitate Partnerships with Other Management Entities

Management Actions

1. **Use education to promote lake protection and enjoyment through stakeholder education.**
   Continuation of current efforts
   Numerous educational topics identified
2. **Continue LLPLD's involvement with other entities that have responsibilities in managing (management units) Long Lake.**
   WDNR Lakes Coordinator, WDNR Fisheries Managers, Vilas County Land & Water Conservation Dept., Vilas County Lakes Assoc., Phelps Town Lakes Association, Wisconsin Valley Improvement Company

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B

APPENDIX B

Watershed Analysis WiLMS Results

Date: 10/9/2012 Scenario: Long Lake Current

Lake Id: LongV_WS_Current
Watershed Id: 0

Hydrologic and Morphometric Data

Tributary Drainage Area: 7146.0 acre
Total Unit Runoff: 14.00 in.
Annual Runoff Volume: 8337.0 acre-ft
Lake Surface Area <As>: 885.0 acre
Lake Volume <V>: 26550.0 acre-ft
Lake Mean Depth <z>: 30.0 ft
Precipitation - Evaporation: 5.5 in.
Hydraulic Loading: 14271.7 acre-ft/year
Areal Water Load <qs>: 16.1 ft/year
Lake Flushing Rate <p>: 0.54 1/year
Water Residence Time: 1.86 year
Observed spring overturn total phosphorus (SPO): 15.8 mg/m^3
Observed growing season mean phosphorus (GSM): 11.4 mg/m^3
% NPS Change: 0%
% PS Change: 0%

NON-POINT SOURCE DATA

Land Use	Acre	Low	Most Likely	High	Loading %	Low	Most Likely	High
	(ac)	Loading (kg/ha-year)				Loading (kg/year)		
Row Crop AG	61.0	0.50	1.00	3.00	4.2	12	25	74
Mixed AG	0.0	0.30	0.80	1.40	0.0	0	0	0
Pasture/Grass	839	0.10	0.30	0.50	17.4	34	102	170
HD Urban (1/8 Ac)	0.0	1.00	1.50	2.00	0.0	0	0	0
MD Urban (1/4 Ac)	3	0.30	0.50	0.80	0.1	0	1	1
Rural Res (>1 Ac)	0.0	0.05	0.10	0.25	0.0	0	0	0
Wetlands	1039	0.10	0.10	0.10	7.2	42	42	42
Forest	5204	0.05	0.09	0.18	32.3	105	190	379
Lake Surface	885.0	0.10	0.30	1.00	18.3	36	107	358

POINT SOURCE DATA

Point Sources	Water Load (m^3/year)	Low (kg/year)	Most Likely (kg/year)	High (kg/year)	Loading %
Big Sand Lake	6820000.0	0.0	120.6	0.0	20.6

SEPTIC TANK DATA

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

TOTALS DATA

Description	Low	Most Likely	High	Loading %
Total Loading (lb)	506.7	1293.7	2257.7	100.0
Total Loading (kg)	229.8	586.8	1024.1	100.0
Areal Loading (lb/ac-year)	0.57	1.46	2.55	
Areal Loading (mg/m^2-year)	64.17	163.84	285.94	
Total PS Loading (lb)	0.0	265.9	0.0	20.6
Total PS Loading (kg)	0.0	120.6	0.0	20.6
Total NPS Loading (lb)	427.7	790.9	1468.1	79.4
Total NPS Loading (kg)	194.0	358.8	665.9	79.4

Phosphorus Prediction and Uncertainty Analysis Module

Date: 10/9/2012 Scenario: 66
Observed spring overturn total phosphorus (SPO): 15.8 mg/m^3
Observed growing season mean phosphorus (GSM): 11.4 mg/m^3
Back calculation for SPO total phosphorus: 0.0 mg/m^3
Back calculation GSM phosphorus: 0.0 mg/m^3
% Confidence Range: 70%
Nurenberg Model Input - Est. Gross Int. Loading: 0 kg

Lake Phosphorus Model	Low Total P (mg/m^3)	Most Likely Total P (mg/m^3)	High Total P (mg/m^3)	Predicted -Observed (mg/m^3)	% Dif.
Walker, 1987 Reservoir	6	15	26	4	35
Canfield-Bachmann, 1981 Natural Lake	8	16	24	5	44
Canfield-Bachmann, 1981 Artificial Lake	8	15	22	4	35
Rechow, 1979 General	4	9	16	-2	-18
Rechow, 1977 Anoxic	9	23	40	12	105
Rechow, 1977 water load<50m/year	5	12	20	1	9
Rechow, 1977 water load>50m/year	N/A	N/A	N/A	N/A	N/A
Walker, 1977 General	6	16	28	0	0
Vollenweider, 1982 Combined OECD	6	14	21	0	0
Dillon-Rigler-Kirchner	4	10	17	-6	-38
Vollenweider, 1982 Shallow Lake/Res.	5	10	17	-4	-29
Larsen-Mercier, 1976	6	14	25	-2	-13
Nurnberg, 1984 Oxic	5	12	20	1	9

Lake Phosphorus Model	Confidence Lower Bound	Confidence Upper Bound	Parameter Fit?	Back Calculation (kg/year)	Model Type
Walker, 1987 Reservoir	8	24	FIT	0	GSM
Canfield-Bachmann, 1981 Natural Lake	5	46	FIT	1	GSM
Canfield-Bachmann, 1981 Artificial Lake	5	43	FIT	1	GSM
Rechow, 1979 General	5	15	FIT	0	GSM
Rechow, 1977 Anoxic	13	36	FIT	0	GSM
Rechow, 1977 water load<50m/year	6	19	FIT	0	GSM
Rechow, 1977 water load>50m/year	N/A	N/A	N/A	N/A	N/A
Walker, 1977 General	7	28	FIT	0	SPO
Vollenweider, 1982 Combined OECD	6	24	FIT	0	ANN
Dillon-Rigler-Kirchner	5	15	FIT	0	SPO
Vollenweider, 1982 Shallow Lake/Res.	5	18	FIT	0	ANN
Larsen-Mercier, 1976	8	22	Pin	0	SPO
Nurnberg, 1984 Oxic	6	20	FIT	0	ANN

C

APPENDIX C

Aquatic Plant Survey Data

Sampling point	Latitude	Longitude	Depth (ft)	Dominant sediment type (M=muck, S=Sand, R=Rock)	Sampled holding rake pole (P) or rake rope (R)?	comments	Total Rake Fullness	EWM	BRASC	CERDE	CHARA	ELEAC	ELEPA	ELOCA	EQUFL	HETDU	ISO_SP	JUNPE	BIDBE	MYRSI	NAJFL	NITELLA	NUPVA	NYMOD	POTAM	POTFO	POTGR	POTNA	POTPR	POTPU	POTRI	POTRO	POTSP	POTST	POTZO	RANFM	SCHAC	SCHTA	SPAAM	UTRVU	VALAM	AQ_MOSS	FW_SPONGE	F_ALGAE	SCHSU	NAJGU	UTRMI	POT_HYB
1	46.050296	-89.043387	3	Muck	Pole		1		1		1													1				1																			
2	46.049873	-89.043394	3	Muck	Pole		1		1		1																																				
3	46.04945	-89.043402	4	Muck	Pole		1		1					1															1																		
4	46.049027	-89.043409	4	Muck	Pole																																									
5	46.048604	-89.043416	4	Muck	Pole																																									
6	46.048181	-89.043424	2	Sand	Pole		1														1																								
7	46.047758	-89.043431	3	Muck	Pole		1														1																								
8	46.047336	-89.043438	3	Muck	Pole		1																																		1					
9	46.046913	-89.043446	2	Muck	Pole		1																					1												1						
10	46.04649	-89.043453	2	Muck	Pole		1		1															1	1				1																	
11	46.046067	-89.04346	2	Muck	Pole		2		1					1					1						1				2		1										1					
12	46.045644	-89.043467				TERRESTRIAL																																									
13	46.045221	-89.043475	1	Rock	Pole		2																		1								1					1		1						
14	46.050714	-89.042772	3	Muck	Pole		3							1																			3								1						
15	46.050291	-89.04278	5	Muck	Pole		3				1			2									1				1						3														
16	46.049868	-89.042787	5	Muck	Pole		2																										2														
17	46.049445	-89.042794	4	Muck	Pole		3																										3														
18	46.049022	-89.042802	5	Muck	Pole		3																										3														
19	46.048599	-89.042809	5	Muck	Pole		1																		1								1														
20	46.048176	-89.042816	4	Muck	Pole		1																				1																				
21	46.047753	-89.042823	2	Sand	Pole																																									
22	46.04733	-89.042831	4	Muck	Pole		1																										1														
23	46.046907	-89.042838	5	Muck	Pole		1							1																			1	1													
24	46.046485	-89.042845	3	Muck	Pole		2																										2														
25	46.046062	-89.042853	4	Muck	Pole		3																										3														
26	46.045639	-89.04286	4	Muck	Pole		3			1																							3														
27	46.045216	-89.042867	2	Muck	Pole		3		1		1													1				1	2		1	1									1					
28	46.051132	-89.042158	2	Sand	Pole		1					1																																		
29	46.050709	-89.042165	5	Muck	Pole		3							1											1								3														
30	46.050286	-89.042172	6	Muck	Pole		3																										3														
31	46.049863	-89.04218	6	Muck	Pole		2																										2														
32	46.04944	-89.042187	5	Muck	Pole		3																										3														
33	46.049017	-89.042194	4	Muck	Pole		3																										3														
34	46.048594	-89.042201	4	Muck	Pole		3																		1								3														
35	46.048171	-89.042209	3	Muck	Pole		3																						1				3														
36	46.047748	-89.042216	5	Muck	Pole	V	3			1				1											1								3														
37	46.047325	-89.042223	2	Sand	Pole		1				1																						1														
38	46.046902	-89.042231	5	Sand	Pole		1																										1														
39	46.046479	-89.042238	3	Muck	Pole		3							1																			3														
40	46.046056	-89.042245	4	Muck	Pole		3																										3														
41	46.045634	-89.042253	3	Muck	Pole		3																										3														
42	46.045211	-89.04226	2	Muck	Pole		3		1					1																1			3														
43	46.05155	-89.041543	2	Sand	Pole		1					1																																		
44	46.051127	-89.04155	6	Muck	Pole		3							1																			2														1
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47	46.049858	-89.041572	7	Muck	Pole		3																										3														
48	46.049435	-89.041579	7	Muck	Pole		3																										3														
49	46.049012	-89.041587	5	Muck	Pole		3																		1					1			2														1
50	46.048589	-89.041594	4	Muck	Pole		3																										3														
51	46.048166	-89.041601	4	Muck	Pole		2							1																			2			1										
52	46.047743	-89.041609	6	Muck	Pole		3							1											1								3														
53	46.04732	-89.041616	5	Muck	Pole		2	1																	1								2														
54	46.046897	-89.041623	3	Sand	Pole		1				1																		1																		
55	46.046474	-89.041631	6	Muck	Pole		3							1																			3														
56	46.046051	-89.041638	3	Muck	Pole		3																										3														
57	46.045628	-89.041645	3	Muck	Pole		3																		1								3														
58	46.045205	-89.041653	4	Muck	Pole		3							1											1								3									1					
59	46.052814	-89.040913	2	Rock	Pole		1																										1														
60	46.052391	-89.040921	2	Sand	Pole		1					1																																		
61	46.051968	-89.040928	5	Sand	Pole		1					1									1							1																		
62	46.051545	-89.040935	7	Sand	Pole		2				2																						1														
63	46.051122	-89.040943	8	Muck	Pole		3							1																			3														
64	46.050699	-89.04095	8	Muck	Pole		3																										3														
65	46.050276	-89.040957	7	Muck	Pole		3																		1								3														
66	46.049853	-89.040965	7	Muck	Pole		3																										3														
67	46.04943	-89.040972	7	Muck	Pole		3																		1								3														
68	46.049007	-89.040979	7	Muck	Pole		3																										3														
69	46.048584	-89.040987	7	Muck	Pole		3							2											1								2														
70	46.048161	-89.040994	7	Muck	Pole		2																		1								2														
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sampling point	Latitude	Longitude	Depth (ft)	Dominant sediment type (M=muck, S=Sand, R=Rock)	Sampled holding rake pole (P) or rake rope (R)?	comments	Total Rake Fullness	EWM	BRASC	CERDE	CHARA	ELEAC	ELEPA	ELOCA	EQUFL	HETDU	ISO_SP	JUNPE	BIDBE	MYRSI	NAJFL	NITELLA	NUPVA	NYMOD	POTAM	POTFO	POTGR	POTNA	POTPR	POTPU	POTRI	POTRO	POTSP	POTST	POTZO	RANFM	SCHAC	SCHTA	SPAAM	UTRVU	VALAM	AQ_MOSS	FW_SPONGE	F_ALGAE	SCHSU	NAJGU	UTRMI	POT_HYB
77	46.0452	-89.041045	1	Muck	Pole		1														1											1															
78	46.054077	-89.040284	3	Rock	Pole		1														1																											
79	46.053654	-89.040291	6	Sand	Pole		1				1										1																											
80	46.053231	-89.040299	6	Sand	Pole		2				1														1		2																				
81	46.052808	-89.040306	7	Sand	Pole																																										
82	46.052385	-89.040313	8	Sand	Pole		2	1											1											1																	
83	46.051963	-89.040321	9	Sand	Pole		2	V																								2															
84	46.05154	-89.040328	11	Sand	Pole		3			1				1		2																1															
85	46.051117	-89.040335	9	Muck	Pole		2	V						1											1						1		1													
86	46.050694	-89.040343	9	Muck	Pole		3							1																		3															
87	46.050271	-89.04035	8	Muck	Pole		3							1																1	2																
88	46.049848	-89.040357	9	Muck	Pole		3																		1						3															
89	46.049425	-89.040365	9	Muck	Pole		3			1				2											1						2															
90	46.049002	-89.040372	8	Muck	Pole		3																								3															
91	46.048579	-89.040379	8	Muck	Pole		3							1																	3															
92	46.048156	-89.040386	8	Muck	Pole		3							1																	3															
93	46.047733	-89.040394	7	Muck	Pole		3																								3															
94	46.04731	-89.040401	6	Muck	Pole		1																							1	1															
95	46.046887	-89.040408	5	Muck	Pole		3																								3												1			
96	46.046464	-89.040416	4	Muck	Pole		3							1											1						3															
97	46.046041	-89.040423	3	Muck	Pole		3																								3															
98	46.045618	-89.04043	3	Muck	Pole		3							1																1	3															
99	46.057033	-89.039625				SHALLOW																																								
100	46.05661	-89.039632	1	Sand	Pole		1				1	1										1																								
101	46.056187	-89.03964	2	Sand	Pole		1				1	1																																	
102	46.055764	-89.039647	4	Rock	Pole		1															1			1																				
103	46.055341	-89.039654	6	Rock	Pole		1															1				1																				
104	46.054918	-89.039662	7	Muck	Pole		1															1	1								1															
105	46.054495	-89.039669	8	Sand	Pole		2							1																	2															
106	46.054072	-89.039676	9	Sand	Pole		1															1				1																1				
107	46.053649	-89.039684	10	Sand	Pole		1			1				1									1																							
108	46.053226	-89.039691	10	Sand	Pole		2	1		2																																		
109	46.052803	-89.039698	12	Sand	Pole		2			2																																		
110	46.05238	-89.039706	12	Sand	Pole		1			1				1																														
111	46.051957	-89.039713	13	Sand	Pole		1				1												1																						
112	46.051534	-89.03972	13	Sand	Pole		1																1																						
113	46.051112	-89.039728	10	Sand	Pole		2			1				1																	1															
114	46.050689	-89.039735	9	Muck	Pole		3							2					1						1						1															
115	46.050266	-89.039742	10	Muck	Pole		1							1																1	1															
116	46.049843	-89.03975				TEMPORARY OBSTACLE																																									
117	46.04942	-89.039757	10	Muck	Pole		2			1				2																														
118	46.048997	-89.039764	8	Muck	Pole		2																								2															
119	46.048574	-89.039772	7	Muck	Pole		3																								3															
120	46.048151	-89.039779	6	Muck	Pole		3							1											1						3															
121	46.047728	-89.039786	4	Muck	Pole		3							2																	3															
122	46.047305	-89.039794	5	Muck	Pole		3																								3															
123	46.046882	-89.039801	4	Muck	Pole		3							1																	3															
124	46.046459	-89.039808	4	Muck	Pole		3																		1						3															
125	46.046036	-89.039816	4	Muck	Pole		3																								3															
126	46.045613	-89.039823				NONNAVIGABLE (PLANTS)																																									
127	46.057451	-89.03901				TERRESTRIAL																																								
128	46.057028	-89.039018	2	Sand	Pole		1										1						1																						
129	46.056605	-89.039025	3	Rock	Pole		1															1																								
130	46.056182	-89.039032	7	Sand	Pole		3			1				1											2																						
131	46.055759	-89.03904	12	Sand	Pole		1																									1															
132	46.055336	-89.039047	16		Rope																																									
133	46.054913	-89.039054	15		Rope		1																1																						
134	46.05449	-89.039062	15		Rope		3																3																						
135	46.054067	-89.039069	14		Rope		1																1																						
136	46.053644	-89.039076	14		Rope		1																1																						
137	46.053221	-89.039084	17		Rope																																									
138	46.052798	-89.039091	19		Rope																																									
139	46.052375	-89.039098	18		Rope																																									
140	46.051952	-89.039106	15		Rope																																									
141	46.051529	-89.039113	13	Rock	Pole																																									
142	46.051106	-89.03912	11	Rock	Pole																																									
143	46.050683	-89.039128	11	Rock	Pole		3	3																																				
144	46.050261	-89.039135	14		Rope		1							1									1																						
145	46.049838	-89.039142	13	Muck	Pole		1							1																															
146	46.049415	-89.03915	10	Muck	Pole		3							2																	2															
147	46.048992	-89.039157	8	Muck	Pole		2																								2															
148	46.048569	-89.039164	7	Muck	Pole		3																								3															
149	46.048146	-89.039172	1	Sand	Pole																																								
150	46.047723	-89.039179	2	Sand	Pole		2				1											1									2					1									
151	46.0473	-89.039186	4	Sand	Pole		1							1								1																								1
152	46.046877	-89.039194	4	Muck	Pole		2																		1						2															

sampling point	Latitude	Longitude	Depth (ft)	Dominant sediment type (M=muck, S=Sand, R=Rock)	Sampled holding rake pole (P) or rake rope (R)?	comments	Total Rake Fullness	EWM	BRASC	CERDE	CHARA	ELEAC	ELEPA	ELOCA	EQUFL	HETDU	ISO_SP	JUNPE	BIDBE	MYRSI	NAJFL	NITELLA	NUPVA	NYMOD	POTAM	POTFO	POTGR	POTNA	POTPR	POTPU	POTRI	POTRO	POTSP	POTST	POTZO	RANFM	SCHAC	SCHTA	SPAAM	UTRVU	VALAM	AQ_MOSS	FW_SPONGE	F_ALGAE	SCHSU	NAJGU	UTRMI	POT_HYB
153	46.046454	-89.039201	3	Muck	Pole		3			1				1						1					1							3															
154	46.046031	-89.039208				NONNAVIGABLE (PLANTS)																																											
155	46.057446	-89.038403	2	Rock	Pole																																										
156	46.057023	-89.03841	5	Sand	Pole		2							1											1							2															
157	46.0566	-89.038417	6	Sand	Pole		3			1				2											1							1															
158	46.056177	-89.038425	15		Rope																	1																								
159	46.055754	-89.038432				DEEP																																									
160	46.055331	-89.038439				DEEP																																								
161	46.054908	-89.038447				DEEP																																								
162	46.054485	-89.038454				DEEP																																								
163	46.054062	-89.038461				DEEP																																								
164	46.053639	-89.038469				DEEP																																								
165	46.053216	-89.038476				DEEP																																								
166	46.052793	-89.038483				DEEP																																								
167	46.05237	-89.038491				DEEP																																								
168	46.051947	-89.038498	19		Rope																																								
169	46.051524	-89.038505	17		Rope																																								
170	46.051101	-89.038513	16		Rope																																								
171	46.050678	-89.03852	15		Rope																																								
172	46.050255	-89.038528	14		Rope		1																								1															
173	46.049832	-89.038535	10	Sand	Pole		1	1																					1	1															
174	46.049409	-89.038542	8	Muck	Pole		3																									3														
175	46.048987	-89.03855	10	Muck	Pole		3																									3														
176	46.048564	-89.038557	4	Sand	Pole		1					1																																		
177	46.05744	-89.037795	5	Rock	Pole		1															1				1				1															
178	46.057018	-89.037803	14		Rope																																								
179	46.056595	-89.03781				DEEP																																								
180	46.056172	-89.037817				DEEP																																								
181	46.055749	-89.037825				DEEP																																								
182	46.055326	-89.037832				DEEP																																								
183	46.054903	-89.037839				DEEP																																								
184	46.05448	-89.037847				DEEP																																								
185	46.054057	-89.037854				DEEP																																								
186	46.053634	-89.037861				DEEP																																								
187	46.053211	-89.037869				DEEP																																								
188	46.052788	-89.037876				DEEP																																								
189	46.052365	-89.037883				DEEP																																								
190	46.051942	-89.037891				DEEP																																								
191	46.051519	-89.037898				DEEP																																								
192	46.051096	-89.037905				DEEP																																								
193	46.050673	-89.037913	18		Rope																																								
194	46.05025	-89.03792	14		Rope		1																									1														
195	46.049827	-89.037927	9	Sand	Pole		2	2		1												1																								
196	46.049404	-89.037935	8	Muck	Pole		2							1																		2														
197	46.048981	-89.037942	6	Muck	Pole		2													1												2	2														
198	46.048558	-89.037949	2	Sand	Pole		1							1																																
199	46.057435	-89.037188	5	Rock	Pole		1															1																								
200	46.057012	-89.037195				DEEP																																								
201	46.056589	-89.037202				DEEP																																								
202	46.056167	-89.03721				DEEP																																								
203	46.055744	-89.037217				DEEP																																								
204	46.055321	-89.037224				DEEP																																								
205	46.054898	-89.037232				DEEP																																								
206	46.054475	-89.037239				DEEP																																								
207	46.054052	-89.037246				DEEP																																								
208	46.053629	-89.037254				DEEP																																								
209	46.053206	-89.037261				DEEP																																								
210	46.052783	-89.037269				DEEP																																								
211	46.05236	-89.037276				DEEP																																								
212	46.051937	-89.037283				DEEP																																								
213	46.051514	-89.037291				DEEP																																								
214	46.051091	-89.037298				DEEP																																								
215	46.050668	-89.037305				DEEP																																								
216	46.050245	-89.037313	16		Rope																																								
217	46.049822	-89.03732	13		Rope		3			2																					2														
218	46.049399	-89.037327	10	Muck	Pole		2			1				2									1						1			1														
219	46.048976	-89.037335	6	Muck	Pole		3							1											1				1		1	3									1				
220	46.057853	-89.036573	3	Rock	Pole		1															1																								
221	46.05743	-89.03658	15		Rope		1																1																								
222	46.057007	-89.036587				DEEP																																								
223	46.056584	-89.036595				DEEP																																								
224	46.056161	-89.036602				DEEP																																								
225	46.055738	-89.03661				DEEP																																								
226	46.055315	-89.036617				DEEP																																								
227	46.054893	-89.036624				DEEP																																								
228	46.05447	-89.036632				DEEP																																								

Sampling point	_Latitude	_Longitude	Depth (ft)	Dominant sediment type (M=muck, S=Sand, R=Rock)	Sampled holding rake pole (P) or rake rope (R)?	comments	Total Rake Fullness	*EWM*	*BRASC*	*CERDE*	*CHARA*	*ELEAC*	*ELEPA*	*ELOCA*	*EQUFL*	*HETDU*	*ISO_SP*	*JUNPE*	*BIDBE*	*MYRSI*	*NAJFL*	*NITELLA*	*NUPVA*	*NYMOD*	*POTAM*	*POTFO*	*POTGR*	*POTNA*	*POTPR*	*POTPU*	*POTRI*	*POTRO*	*POTSP*	*POTST*	*POTZO*	*RANFM*	*SCHAC*	*SCHTA*	*SPAAM*	*UTRVU*	*VALAM*	*AQ_MOSS*	*FW_SPONGE*	*F_ALGAE*	*SCHSU*	*NAJGU*	*UTRMI*	*POT_HYB*
229	46.054047	-89.036639				DEEP																																									
230	46.053624	-89.036646				DEEP																																									
231	46.053201	-89.036654				DEEP																																									
232	46.052778	-89.036661				DEEP																																									
233	46.052355	-89.036668				DEEP																																									
234	46.051932	-89.036676				DEEP																																									
235	46.051509	-89.036683				DEEP																																									
236	46.051086	-89.03669				DEEP																																									
237	46.050663	-89.036698				DEEP																																									
238	46.05024	-89.036705	14		Rope		1															1																								
239	46.049817	-89.036713	9	Rock	Pole		3			1	3			2								1																								
240	46.049394	-89.03672	8	Muck	Pole		3							1															2			2													
241	46.048971	-89.036727	4	Sand	Pole		1														1					1				1														
242	46.058271	-89.035958	2	Sand	Pole		1					1									1																								
243	46.057848	-89.035965	8	Rock	Pole		1														1									1														
244	46.057425	-89.035973				DEEP																																								
245	46.057002	-89.03598				DEEP																																								
246	46.056579	-89.035987				DEEP																																								
247	46.056156	-89.035995				DEEP																																								
248	46.055733	-89.036002				DEEP																																								
249	46.05531	-89.036009				DEEP																																								
250	46.054887	-89.036017				DEEP																																								
251	46.054464	-89.036024				DEEP																																								
252	46.054041	-89.036032				DEEP																																								
253	46.053619	-89.036039				DEEP																																								
254	46.053196	-89.036046				DEEP																																								
255	46.052773	-89.036054				DEEP																																								
256	46.05235	-89.036061				DEEP																																								
257	46.051927	-89.036068				DEEP																																								
258	46.051504	-89.036076				DEEP																																								
259	46.051081	-89.036083				DEEP																																								
260	46.050658	-89.03609				DEEP																																								
261	46.050235	-89.036098	12	Sand	Pole		2			2																						1												
262	46.049812	-89.036105	9	Rock	Pole		1				1											1				1																		
263	46.049389	-89.036112	7	Muck	Pole		3							1																	2													
264	46.048966	-89.03612	4	Sand	Pole		1																				1			1														
265	46.058689	-89.035343	1	Rock	Pole																																								
266	46.058266	-89.03535	16		Rope																																								
267	46.057843	-89.035358				DEEP																																								
268	46.05742	-89.035365				DEEP																																								
269	46.056997	-89.035372				DEEP																																								
270	46.056574	-89.03538				DEEP																																								
271	46.056151	-89.035387				DEEP																																								
272	46.055728	-89.035395				DEEP																																								
273	46.055305	-89.035402				DEEP																																								
274	46.054882	-89.035409				DEEP																																								
275	46.054459	-89.035417				DEEP																																								
276	46.054036	-89.035424				DEEP																																								
277	46.053613	-89.035431				DEEP																																								
278	46.05319	-89.035439				DEEP																																								
279	46.052768	-89.035446				DEEP																																								
280	46.052345	-89.035453				DEEP																																								
281	46.051922	-89.035461				DEEP																																								
282	46.051499	-89.035468				DEEP																																								
283	46.051076	-89.035476	17		Rope																																								
284	46.050653	-89.035483	14		Rope		2															1								2														
285	46.05023	-89.03549	11	Sand	Pole		3			1																				3														
286	46.049807	-89.035498	8	Rock	Pole		3																									3												
287	46.049384	-89.035505	6	Muck	Pole		3																								1	3										1				
288	46.048961	-89.035512	1	Sand	Pole		1					1						1																		1									
289	46.059107	-89.034728	2	Sand	Pole		1														1																				1				
290	46.058684	-89.034735	9	Sand	Pole		2							1						1		1			1					1		1									1				
291	46.058261	-89.034743				DEEP																																								
292	46.057838	-89.03475				DEEP																																								
293	46.057415	-89.034758				DEEP																																								
294	46.056992	-89.034765				DEEP																																								
295	46.056569	-89.034772				DEEP																																								
296	46.056146	-89.03478				DEEP																																								
297	46.055723	-89.034787				DEEP																																								
298	46.0553	-89.034794				DEEP																																								
299	46.054877	-89.034802				DEEP																																								
300	46.054454	-89.034809				DEEP																																								
301	46.054031	-89.034817				DEEP																																								
302	46.053608	-89.034824				DEEP																																								
303	46.053185	-89.034831				DEEP																																								
304	46.052762	-89.034839				DEEP																																								

Sampling point	Latitude	Longitude	Depth (ft)	Dominant sediment type (M=muck, S=Sand, R=Rock)	Sampled holding rake pole (P) or rake rope (R)?	comments	Total Rake Fullness	EWM	BRASC	CERDE	CHARA	ELEAC	ELEPA	ELOCA	EQUFL	HETDU	ISO_SP	JUNPE	BIDBE	MYRSI	NAJFL	NITELLA	NUPVA	NYMOD	POTAM	POTFO	POTGR	POTNA	POTPR	POTPU	POTRI	POTRO	POTSP	POTST	POTZO	RANFM	SCHAC	SCHTA	SPAAM	UTRVU	VALAM	AQ_MOSS	FW_SPONGE	F_ALGAE	SCHSU	NAJGU	UTRMI	POT_HYB
305	46.052339	-89.034846				DEEP																																									
306	46.051916	-89.034853				DEEP																																									
307	46.051494	-89.034861				DEEP																																									
308	46.051071	-89.034868	12	Sand	Pole		1			1																																				
309	46.050648	-89.034875	9	Rock	Pole		2															2				1																			
310	46.050225	-89.034883	9	Rock	Pole		2							1																		2														
311	46.049802	-89.03489	7	Muck	Pole		2																									2														
312	46.049379	-89.034898	4	Sand	Pole		2																		1							2								1						
313	46.06037	-89.034098	3	Rock	Pole		1														1																									
314	46.059947	-89.034106	12	Rock	Pole		1																											1													
315	46.059524	-89.034113				DEEP																																									
316	46.059102	-89.034121				DEEP																																									
317	46.058679	-89.034128				DEEP																																									
318	46.058256	-89.034135				DEEP																																									
319	46.057833	-89.034143				DEEP																																									
320	46.05741	-89.03415				DEEP																																									
321	46.056987	-89.034157				DEEP																																									
322	46.056564	-89.034165				DEEP																																									
323	46.056141	-89.034172				DEEP																																									
324	46.055718	-89.03418				DEEP																																									
325	46.055295	-89.034187				DEEP																																									
326	46.054872	-89.034194				DEEP																																									
327	46.054449	-89.034202				DEEP																																									
328	46.054026	-89.034209				DEEP																																									
329	46.053603	-89.034216				DEEP																																									
330	46.05318	-89.034224				DEEP																																									
331	46.052757	-89.034231				DEEP																																									
332	46.052334	-89.034239				DEEP																																									
333	46.051911	-89.034246				DEEP																																									
334	46.051488	-89.034253	13		Rope		2							1									2																								
335	46.051065	-89.034261	8	Rock	Pole		2			1				2									1																								1
336	46.050642	-89.034268	8	Muck	Pole		3			3				1																		2														
337	46.05022	-89.034275	6	Muck	Pole		3							1																		3														
338	46.049797	-89.034283	3	Muck	Pole		3																		1							3														
339	46.060788	-89.033483	6	Rock	Pole																																										
340	46.060365	-89.033491				DEEP																																									
341	46.059942	-89.033498				DEEP																																									
342	46.059519	-89.033506				DEEP																																									
343	46.059096	-89.033513				DEEP																																									
344	46.058673	-89.03352				DEEP																																									
345	46.05825	-89.033528				DEEP																																									
346	46.057828	-89.033535				DEEP																																									
347	46.057405	-89.033543				DEEP																																									
348	46.056982	-89.03355				DEEP																																									
349	46.056559	-89.033557				DEEP																																									
350	46.056136	-89.033565				DEEP																																									
351	46.055713	-89.033572				DEEP																																									
352	46.05529	-89.033579				DEEP																																									
353	46.054867	-89.033587				DEEP																																									
354	46.054444	-89.033594				DEEP																																									
355	46.054021	-89.033602				DEEP																																									
356	46.053598	-89.033609				DEEP																																									
357	46.053175	-89.033616				DEEP																																									
358	46.052752	-89.033624				DEEP																																									
359	46.052329	-89.033631				DEEP																																									
360	46.051906	-89.033638	17		Rope									1																																	
361	46.051483	-89.033646	7	Sand	Pole		1																									1														
362	46.05106	-89.033653	3	Rock	Pole		1																				1																			
363	46.062052	-89.032854	2	Rock	Pole			V																																						
364	46.061629	-89.032861	8	Rock	Pole		1																								1															
365	46.061206	-89.032869				DEEP																																									
366	46.060783	-89.032876				DEEP																																									
367	46.06036	-89.032883				DEEP																																									
368	46.059937	-89.032891				DEEP																																									
369	46.059514	-89.032898				DEEP																																									
370	46.059091	-89.032905				DEEP																																									
371	46.058668	-89.032913				DEEP																																									
372	46.058245	-89.03292				DEEP																																									
373	46.057822	-89.032928				DEEP																																									
374	46.057399	-89.032935				DEEP																																									
375	46.056976	-89.032942				DEEP																																									
376	46.056554	-89.03295				DEEP																																									
377	46.056131	-89.032957				DEEP																																									
378	46.055708	-89.032965				DEEP																																									
379	46.055285	-89.032972				DEEP																																									
380	46.054862	-89.032979				DEEP																																									

Sampling point	Latitude	Longitude	Depth (ft)	Dominant sediment type (M=muck, S=Sand, R=Rock)	Sampled holding rake pole (P) or rake rope (R)?	comments	Total Rake Fullness	EWM	BRASC	CERDE	CHARA	ELEAC	ELEPA	ELOCA	EQUFL	HETDU	ISO_SP	JUNPE	BIDBE	MYRSI	NAJFL	NITELLA	NUPVA	NYMOD	POTAM	POTFO	POTGR	POTNA	POTPR	POTPU	POTRI	POTRO	POTSP	POTST	POTZO	RANFM	SCHAC	SCHTA	SPAAM	UTRVU	VALAM	AQ_MOSS	FW_SPONGE	F_ALGAE	SCHSU	NAJGU	UTRMI	POT_HYB
381	46.054439	-89.032987				DEEP																																									
382	46.054016	-89.032994				DEEP																																									
383	46.053593	-89.033001				DEEP																																									
384	46.05317	-89.033009				DEEP																																									
385	46.052747	-89.033016				DEEP																																									
386	46.052324	-89.033024	14		Rope																																									
387	46.051901	-89.033031	6	Sand	Pole		3							1											1							2													
388	46.06247	-89.032239	2	Sand	Pole																																									
389	46.062047	-89.032246	20		Rope																																									
390	46.061624	-89.032254				DEEP																																									
391	46.061201	-89.032261				DEEP																																									
392	46.060778	-89.032268				DEEP																																									
393	46.060355	-89.032276				DEEP																																									
394	46.059932	-89.032283				DEEP																																									
395	46.059509	-89.032291				DEEP																																									
396	46.059086	-89.032298				DEEP																																									
397	46.058663	-89.032305				DEEP																																									
398	46.05824	-89.032313				DEEP																																									
399	46.057817	-89.03232				DEEP																																									
400	46.057394	-89.032327				DEEP																																									
401	46.056971	-89.032335				DEEP																																									
402	46.056548	-89.032342				DEEP																																									
403	46.056125	-89.03235				DEEP																																									
404	46.055703	-89.032357				DEEP																																									
405	46.05528	-89.032364				DEEP																																									
406	46.054857	-89.032372				DEEP																																									
407	46.054434	-89.032379				DEEP																																									
408	46.054011	-89.032387				DEEP																																									
409	46.053588	-89.032394				DEEP																																									
410	46.053165	-89.032401				DEEP																																									
411	46.052742	-89.032409				DEEP																																									
412	46.052319	-89.032416	6	Sand	Pole		1				1										1										1													
413	46.062888	-89.031624	3	Sand	Pole		1				1																																		
414	46.062465	-89.031631	15		Rope																																									
415	46.062042	-89.031639				DEEP																																									
416	46.061619	-89.031646				DEEP																																									
417	46.061196	-89.031653				DEEP																																									
418	46.060773	-89.031661				DEEP																																									
419	46.06035	-89.031668				DEEP																																									
420	46.059927	-89.031676				DEEP																																									
421	46.059504	-89.031683				DEEP																																									
422	46.059081	-89.03169				DEEP																																									
423	46.058658	-89.031698				DEEP																																									
424	46.058235	-89.031705				DEEP																																									
425	46.057812	-89.031713				DEEP																																									
426	46.057389	-89.03172				DEEP																																									
427	46.056966	-89.031727				DEEP																																									
428	46.056543	-89.031735				DEEP																																									
429	46.05612	-89.031742				DEEP																																									
430	46.055697	-89.03175				DEEP																																									
431	46.055274	-89.031757				DEEP																																									
432	46.054851	-89.031764				DEEP																																									
433	46.054429	-89.031772				DEEP																																									
434	46.054006	-89.031779				DEEP																																									
435	46.053583	-89.031786				DEEP																																									
436	46.05316	-89.031794				DEEP																																									
437	46.052737	-89.031801	5	Rock	Pole		1																									1													
438	46.063728	-89.031001	1	Sand	Pole		1							1																1											1					
439	46.063305	-89.031009	10	Sand	Pole		2													1												1													
440	46.062882	-89.031016				DEEP																																									
441	46.062459	-89.031024				DEEP																																									
442	46.062036	-89.031031				DEEP																																									
443	46.061614	-89.031038				DEEP																																									
444	46.061191	-89.031046				DEEP																																									
445	46.060768	-89.031053				DEEP																																									
446	46.060345	-89.031061				DEEP																																									
447	46.059922	-89.031068				DEEP																																									
448	46.059499	-89.031075				DEEP																																									
449	46.059076	-89.031083				DEEP																																									
450	46.058653	-89.03109				DEEP																																									
451	46.05823	-89.031098				DEEP																																									
452	46.057807	-89.031105				DEEP																																									
453	46.057384	-89.031112				DEEP																																									
454	46.056961	-89.03112				DEEP																																									
455	46.056538	-89.031127				DEEP																																									
456	46.056115	-89.031135				DEEP																																									

sampling point	latitude	longitude	Depth (ft)	Dominant sediment type (M=muck, S=Sand, R=Rock)	Sampled holding rake pole (P) or rake rope (R)?	comments	Total Rake Fullness	EWM	BRASC	CERDE	CHARA	ELEAC	ELEPA	ELOCA	EQUFL	HETDU	ISO_SP	JUNPE	BIDBE	MYRSI	NAJFL	NITELLA	NUPVA	NYMOD	POTAM	POTFO	POTGR	POTNA	POTPR	POTPU	POTRI	POTRO	POTSP	POTST	POTZO	RANFM	SCHAC	SCHTA	SPAAM	UTRVU	VALAM	AQ_MOSS	FW_SPONGE	F_ALGAE	SCHSU	NAJGU	UTRMI	POT_HYB
457	46.055692	-89.031142				DEEP																																									
458	46.055269	-89.031149				DEEP																																									
459	46.054846	-89.031157				DEEP																																									
460	46.054423	-89.031164				DEEP																																									
461	46.054	-89.031172				DEEP																																									
462	46.053577	-89.031179				DEEP																																									
463	46.053154	-89.031186	6	Rock	Pole		1							1							1											1														
464	46.064992	-89.030372	2	Sand	Pole		1														1				1																				
465	46.064569	-89.030379	6	Rock	Pole		1																									1														
466	46.064146	-89.030386				TEMPORARY OBSTACLE																																									
467	46.063723	-89.030394				DEEP																																									
468	46.0633	-89.030401				DEEP																																									
469	46.062877	-89.030409				DEEP																																									
470	46.062454	-89.030416				DEEP																																									
471	46.062031	-89.030423				DEEP																																									
472	46.061608	-89.030431				DEEP																																									
473	46.061185	-89.030438				DEEP																																									
474	46.060762	-89.030446				DEEP																																									
475	46.06034	-89.030453				DEEP																																									
476	46.059917	-89.03046				DEEP																																									
477	46.059494	-89.030468				DEEP																																									
478	46.059071	-89.030475				DEEP																																									
479	46.058648	-89.030483				DEEP																																									
480	46.058225	-89.03049				DEEP																																									
481	46.057802	-89.030498				DEEP																																									
482	46.057379	-89.030505				DEEP																																									
483	46.056956	-89.030512				DEEP																																									
484	46.056533	-89.03052				DEEP																																									
485	46.05611	-89.030527				DEEP																																									
486	46.055687	-89.030535				DEEP																																									
487	46.055264	-89.030542				DEEP																																									
488	46.054841	-89.030549				DEEP																																									
489	46.054418	-89.030557				DEEP																																									
490	46.053995	-89.030564				DEEP																																									
491	46.053572	-89.030572	5	Rock	Pole		1														1																									
492	46.06541	-89.029757	4	Rock	Pole		1														1																									
493	46.064987	-89.029764	16		Rope																																										
494	46.064564	-89.029771	32			DEEP																																									
495	46.064141	-89.029779				DEEP																																									
496	46.063718	-89.029786				DEEP																																									
497	46.063295	-89.029794				DEEP																																									
498	46.062872	-89.029801				DEEP																																									
499	46.062449	-89.029808				DEEP																																									
500	46.062026	-89.029816				DEEP																																									
501	46.061603	-89.029823				DEEP																																									
502	46.06118	-89.029831				DEEP																																									
503	46.060757	-89.029838				DEEP																																									
504	46.060334	-89.029846				DEEP																																									
505	46.059911	-89.029853				DEEP																																									
506	46.059488	-89.02986				DEEP																																									
507	46.059066	-89.029868				DEEP																																									
508	46.058643	-89.029875				DEEP																																									
509	46.05822	-89.029883				DEEP																																									
510	46.057797	-89.02989				DEEP																																									
511	46.057374	-89.029897				DEEP																																									
512	46.056951	-89.029905				DEEP																																									
513	46.056528	-89.029912				DEEP																																									
514	46.056105	-89.02992				DEEP																																									
515	46.055682	-89.029927				DEEP																																									
516	46.055259	-89.029934				DEEP																																									
517	46.054836	-89.029942				DEEP																																									
518	46.054413	-89.029949	15		Rope		1												1			1																							
519	46.05399	-89.029957	3	Rock	Pole		1														1																									
520	46.065828	-89.029142	3	Rock	Pole		2																		2					1															
521	46.065405	-89.029149	17		Rope		3															3																							
522	46.064982	-89.029156				DEEP																																									
523	46.064559	-89.029164				DEEP																																									
524	46.064136	-89.029171				DEEP																																									
525	46.063713	-89.029179				DEEP																																									
526	46.06329	-89.029186				DEEP																																									
527	46.062867	-89.029193				DEEP																																									
528	46.062444	-89.029201				DEEP																																									
529	46.062021	-89.029208				DEEP																																									
530	46.061598	-89.029216				DEEP																																									
531	46.061175	-89.029223				DEEP																																									
532	46.060752	-89.029231				DEEP																																									

sampling point	latitude	longitude	Depth (ft)	Dominant sediment type (M=muck, S=Sand, R=Rock)	Sampled holding rake pole (P) or rake rope (R)?	comments	Total Rake Fullness	EWM	BRASC	CERDE	CHARA	ELEAC	ELEPA	ELOCA	EQUFL	HETDU	ISO_SP	JUNPE	BIDBE	MYRSI	NAJFL	NITELLA	NUPVA	NYMOD	POTAM	POTFO	POTGR	POTNA	POTPR	POTPU	POTRI	POTRO	POTSP	POTST	POTZO	RANFM	SCHAC	SCHTA	SPAAM	UTRVU	VALAM	AQ_MOSS	FW_SPONGE	F_ALGAE	SCHSU	NAJGU	UTRMI	POT_HYB
533	46.060329	-89.029238				DEEP																																									
534	46.059906	-89.029245				DEEP																																									
535	46.059483	-89.029253				DEEP																																									
536	46.05906	-89.02926				DEEP																																									
537	46.058637	-89.029268				DEEP																																									
538	46.058214	-89.029275				DEEP																																									
539	46.057792	-89.029282				DEEP																																									
540	46.057369	-89.02929				DEEP																																									
541	46.056946	-89.029297				DEEP																																									
542	46.056523	-89.029305				DEEP																																									
543	46.0561	-89.029312				DEEP																																									
544	46.055677	-89.02932				DEEP																																									
545	46.055254	-89.029327				DEEP																																									
546	46.054831	-89.029334	12	Rock	Pole		1							1																																
547	46.065822	-89.028534	15		Rope																																									
548	46.065399	-89.028541				DEEP																																									
549	46.064977	-89.028549				DEEP																																									
550	46.064554	-89.028556				DEEP																																									
551	46.064131	-89.028564				DEEP																																									
552	46.063708	-89.028571				DEEP																																									
553	46.063285	-89.028578				DEEP																																									
554	46.062862	-89.028586				DEEP																																									
555	46.062439	-89.028593				DEEP																																									
556	46.062016	-89.028601				DEEP																																									
557	46.061593	-89.028608				DEEP																																									
558	46.06117	-89.028616				DEEP																																									
559	46.060747	-89.028623				DEEP																																									
560	46.060324	-89.02863				DEEP																																									
561	46.059901	-89.028638				DEEP																																									
562	46.059478	-89.028645				DEEP																																									
563	46.059055	-89.028653				DEEP																																									
564	46.058632	-89.02866				DEEP																																									
565	46.058209	-89.028668				DEEP																																									
566	46.057786	-89.028675				DEEP																																									
567	46.057363	-89.028682				DEEP																																									
568	46.05694	-89.02869				DEEP																																									
569	46.056517	-89.028697				DEEP																																									
570	46.056095	-89.028705				DEEP																																									
571	46.055672	-89.028712				DEEP																																									
572	46.055249	-89.028719				DEEP																																									
573	46.054826	-89.028727	3	Rock	Pole		1					1									1																			1						
574	46.06624	-89.027919	6	Rock	Pole		1														1																									
575	46.065817	-89.027926				DEEP																																									
576	46.065394	-89.027934				DEEP																																									
577	46.064971	-89.027941				DEEP																																									
578	46.064548	-89.027949				DEEP																																									
579	46.064125	-89.027956				DEEP																																									
580	46.063702	-89.027963				DEEP																																									
581	46.06328	-89.027971				DEEP																																									
582	46.062857	-89.027978				DEEP																																									
583	46.062434	-89.027986				DEEP																																									
584	46.062011	-89.027993				DEEP																																									
585	46.061588	-89.028001				DEEP																																									
586	46.061165	-89.028008				DEEP																																									
587	46.060742	-89.028015				DEEP																																									
588	46.060319	-89.028023				DEEP																																									
589	46.059896	-89.02803				DEEP																																									
590	46.059473	-89.028038				DEEP																																									
591	46.05905	-89.028045				DEEP																																									
592	46.058627	-89.028053				DEEP																																									
593	46.058204	-89.02806				DEEP																																									
594	46.057781	-89.028067				DEEP																																									
595	46.057358	-89.028075				DEEP																																									
596	46.056935	-89.028082				DEEP																																									
597	46.056512	-89.02809				DEEP																																									
598	46.056089	-89.028097				DEEP																																									
599	46.055666	-89.028104				DEEP																																									
600	46.055243	-89.028112	5	Rock	Pole		2			1				1																			1												
601	46.067081	-89.027296	3	Sand	Pole		1														1																			1						
602	46.066658	-89.027304	6	Sand	Pole		1														1																									
603	46.066235	-89.027311	21			DEEP																																									
604	46.065812	-89.027319				DEEP																																									
605	46.065389	-89.027326				DEEP																																									
606	46.064966	-89.027334				DEEP																																									
607	46.064543	-89.027341				DEEP																																									
608	46.06412	-89.027348				DEEP																																									

Sampling point	Latitude	Longitude	Depth (ft)	Dominant sediment type (M=muck, S=Sand, R=Rock)	Sampled holding rake pole (P) or rake rope (R)?	comments	Total Rake Fullness	EWM	BRASC	CERDE	CHARA	ELEAC	ELEPA	ELOCA	EQUFL	HETDU	ISO_SP	JUNPE	BIDBE	MYRSI	NAJFL	NITELLA	NUPVA	NYMOD	POTAM	POTFO	POTGR	POTNA	POTPR	POTPU	POTRI	POTRO	POTSP	POTST	POTZO	RANFM	SCHAC	SCHTA	SPAAM	UTRVU	VALAM	AQ_MOSS	FW_SPONGE	F_ALGAE	SCHSU	NAJGU	UTRMI	POT_HYB
609	46.063697	-89.027356				DEEP																																									
610	46.063274	-89.027363				DEEP																																									
611	46.062851	-89.027371				DEEP																																									
612	46.062428	-89.027378				DEEP																																									
613	46.062006	-89.027386				DEEP																																									
614	46.061583	-89.027393				DEEP																																									
615	46.06116	-89.0274				DEEP																																									
616	46.060737	-89.027408				DEEP																																									
617	46.060314	-89.027415				DEEP																																									
618	46.059891	-89.027423				DEEP																																									
619	46.059468	-89.02743				DEEP																																									
620	46.059045	-89.027438				DEEP																																									
621	46.058622	-89.027445				DEEP																																									
622	46.058199	-89.027452				DEEP																																									
623	46.057776	-89.02746				DEEP																																									
624	46.057353	-89.027467				DEEP																																									
625	46.05693	-89.027475				DEEP																																									
626	46.056507	-89.027482				DEEP																																									
627	46.056084	-89.02749				DEEP																																									
628	46.055661	-89.027497	6	Sand	Pole		2																							1		2															
629	46.067922	-89.026674	2	Sand	Pole		2														2										1									1					
630	46.067499	-89.026681	5	Sand	Pole		1														1				1														1					
631	46.067076	-89.026689	15		Rope																																									
632	46.066653	-89.026696	22			DEEP																																									
633	46.06623	-89.026704				DEEP																																									
634	46.065807	-89.026711				DEEP																																									
635	46.065384	-89.026719				DEEP																																									
636	46.064961	-89.026726				DEEP																																									
637	46.064538	-89.026733				DEEP																																									
638	46.064115	-89.026741				DEEP																																									
639	46.063692	-89.026748				DEEP																																									
640	46.063269	-89.026756				DEEP																																									
641	46.062846	-89.026763				DEEP																																									
642	46.062423	-89.026771				DEEP																																									
643	46.062	-89.026778				DEEP																																									
644	46.061577	-89.026785				DEEP																																									
645	46.061154	-89.026793				DEEP																																									
646	46.060731	-89.0268				DEEP																																									
647	46.060309	-89.026808				DEEP																																									
648	46.059886	-89.026815				DEEP																																									
649	46.059463	-89.026823				DEEP																																									
650	46.05904	-89.02683				DEEP																																									
651	46.058617	-89.026837				DEEP																																									
652	46.058194	-89.026845				DEEP																																									
653	46.057771	-89.026852				DEEP																																									
654	46.057348	-89.02686				DEEP																																									
655	46.056925	-89.026867				DEEP																																									
656	46.056502	-89.026875				DEEP																																									
657	46.056079	-89.026882				DEEP																																									
658	46.055656	-89.026889	6	Muck	Pole		2							1																		2															
659	46.068762	-89.026051				DOCK																																									
660	46.068339	-89.026059	11	Sand	Pole		1																			1																				
661	46.067916	-89.026066	17		Rope																																									
662	46.067494	-89.026074				DEEP																																									
663	46.067071	-89.026081				DEEP																																									
664	46.066648	-89.026089				DEEP																																									
665	46.066225	-89.026096				DEEP																																									
666	46.065802	-89.026104				DEEP																																									
667	46.065379	-89.026111				DEEP																																									
668	46.064956	-89.026118				DEEP																																									
669	46.064533	-89.026126				DEEP																																									
670	46.06411	-89.026133				DEEP																																									
671	46.063687	-89.026141				DEEP																																									
672	46.063264	-89.026148				DEEP																																									
673	46.062841	-89.026156				DEEP																																									
674	46.062418	-89.026163				DEEP																																									
675	46.061995	-89.02617				DEEP																																									
676	46.061572	-89.026178				DEEP																																									
677	46.061149	-89.026185				DEEP																																									
678	46.060726	-89.026193				DEEP																																									
679	46.060303	-89.0262				DEEP																																									
680	46.05988	-89.026208				DEEP																																									
681	46.059457	-89.026215				DEEP																																									
682	46.059035	-89.026223				DEEP																																									
683	46.058612	-89.02623				DEEP																																									
684	46.058189	-89.026237				DEEP																																									

sampling point	latitude	longitude	Depth (ft)	Dominant sediment type (M=muck, S=Sand, R=Rock)	Sampled holding rake pole (P) or rake rope (R)?	comments	Total Rake Fullness	*EWM*	*BRASC*	*CERDE*	*CHARA*	*ELEAC*	*ELEPA*	*ELOCA*	*EQUFL*	*HETDU*	*ISO_SP*	*JUNPE*	*BIDBE*	*MYRSI*	*NAJFL*	*NITELLA*	*NUPVA*	*NYMOD*	*POTAM*	*POTFO*	*POTGR*	*POTNA*	*POTPR*	*POTPU*	*POTRI*	*POTRO*	*POTSP*	*POTST*	*POTZO*	*RANFM*	*SCHAC*	*SCHTA*	*SPAAM*	*UTRVU*	*VALAM*	*AQ_MOSS*	*FW_SPONGE*	*F_ALGAE*	*SCHSU*	*NAJSU*	*UTRMI*	*POT_HYB*
685	46.057766	-89.026245				DEEP																																									
686	46.057343	-89.026252				DEEP																																									
687	46.05692	-89.02626				DEEP																																									
688	46.056497	-89.026267				DEEP																																									
689	46.056074	-89.026275	18		Rope																																									
690	46.055651	-89.026282	13	Sand	Pole		3							1																3																
691	46.055228	-89.026289	3	Rock	Pole		1																		1																				
692	46.06918	-89.025436	10	Rock	Pole		3			2				2																																
693	46.068757	-89.025444				DEEP																																									
694	46.068334	-89.025451				DEEP																																									
695	46.067911	-89.025459				DEEP																																									
696	46.067488	-89.025466				DEEP																																									
697	46.067065	-89.025474				DEEP																																									
698	46.066642	-89.025481				DEEP																																									
699	46.066219	-89.025488				DEEP																																									
700	46.065797	-89.025496				DEEP																																									
701	46.065374	-89.025503				DEEP																																									
702	46.064951	-89.025511				DEEP																																									
703	46.064528	-89.025518				DEEP																																									
704	46.064105	-89.025526				DEEP																																									
705	46.063682	-89.025533				DEEP																																									
706	46.063259	-89.025541				DEEP																																									
707	46.062836	-89.025548				DEEP																																									
708	46.062413	-89.025555				DEEP																																									
709	46.06199	-89.025563				DEEP																																									
710	46.061567	-89.02557				DEEP																																									
711	46.061144	-89.025578				DEEP																																									
712	46.060721	-89.025585				DEEP																																									
713	46.060298	-89.025593				DEEP																																									
714	46.059875	-89.0256				DEEP																																									
715	46.059452	-89.025608				DEEP																																									
716	46.059029	-89.025615				DEEP																																									
717	46.058606	-89.025622				DEEP																																									
718	46.058183	-89.02563	17		Rope																																									
719	46.05776	-89.025637				DEEP																																									
720	46.057338	-89.025645				DEEP																																									
721	46.056915	-89.025652				DEEP																																									
722	46.056492	-89.02566	18		Rope																																									
723	46.056069	-89.025667	10	Muck	Pole		2																									2															
724	46.055646	-89.025674	6	Muck	Pole		3							3											1							2	1								2						
725	46.055223	-89.025682	4	Sand	Pole		1															1																								
726	46.070021	-89.024814	1	Rock	Pole		1														1						1																		
727	46.069598	-89.024821	20		Rope																																									
728	46.069175	-89.024829				DEEP																																									
729	46.068752	-89.024836				DEEP																																									
730	46.068329	-89.024844				DEEP																																									
731	46.067906	-89.024851				DEEP																																									
732	46.067483	-89.024858				DEEP																																									
733	46.06706	-89.024866				DEEP																																									
734	46.066637	-89.024873				DEEP																																									
735	46.066214	-89.024881				DEEP																																									
736	46.065791	-89.024888				DEEP																																									
737	46.065368	-89.024896				DEEP																																									
738	46.064945	-89.024903				DEEP																																									
739	46.064523	-89.024911				DEEP																																									
740	46.0641	-89.024918				DEEP																																									
741	46.063677	-89.024926				DEEP																																									
742	46.063254	-89.024933				DEEP																																									
743	46.062831	-89.02494				DEEP																																									
744	46.062408	-89.024948				DEEP																																									
745	46.061985	-89.024955				DEEP																																									
746	46.061562	-89.024963				DEEP																																									
747	46.061139	-89.02497				DEEP																																									
748	46.060716	-89.024978				DEEP																																									
749	46.060293	-89.024985				DEEP																																									
750	46.05987	-89.024993				DEEP																																									
751	46.059447	-89.025				DEEP																																									
752	46.059024	-89.025007	7	Rock	Pole																																									
753	46.058601	-89.025015	6	Rock	Pole																																									
754	46.058178	-89.025022	7	Rock	Pole		1																							1																
755	46.057755	-89.02503	8	Rock	Pole		1	1													1																								
756	46.057332	-89.025037	7	Rock	Pole																																									
757	46.056909	-89.025045	14		Rope		1							1								1								1																
758	46.056486	-89.025052	7	Muck	Pole		2																									2															
759	46.056064	-89.02506	6	Muck	Pole		3							2																		3															
760	46.055641	-89.025067	5	Muck	Pole		3							2																		3															

sampling point	latitude	longitude	Depth (ft)	Dominant sediment type (M=muck, S=Sand, R=Rock)	Sampled holding rake pole (P) or rake rope (R)?	comments	Total Rake Fullness	EWM	BRASC	CERDE	CHARA	ELEAC	ELEPA	ELOCA	EQUFL	HETDU	ISO_SP	JUNPE	BIDBE	MYRSI	NAJFL	NITELLA	NUPVA	NYMOD	POTAM	POTFO	POTGR	POTNA	POTPR	POTPU	POTRI	POTRO	POTSP	POTST	POTZO	RANFM	SCHAC	SCHTA	SPAAM	UTRVU	VALAM	AQ_MOSS	FW_SPONGE	F_ALGAE	SCHSU	NAJGU	UTRMI	POT_HYB
761	46.055218	-89.025074	3	Rock	Pole		1														1																										
762	46.070439	-89.024199	5	Rock	Pole		2														1									1										1							
763	46.070016	-89.024206				DEEP																																									
764	46.069593	-89.024214				DEEP																																									
765	46.06917	-89.024221				DEEP																																									
766	46.068747	-89.024229				DEEP																																									
767	46.068324	-89.024236				DEEP																																									
768	46.067901	-89.024243				DEEP																																									
769	46.067478	-89.024251				DEEP																																									
770	46.067055	-89.024258				DEEP																																									
771	46.066632	-89.024266				DEEP																																									
772	46.066209	-89.024273				DEEP																																									
773	46.065786	-89.024281				DEEP																																									
774	46.065363	-89.024288				DEEP																																									
775	46.06494	-89.024296				DEEP																																									
776	46.064517	-89.024303				DEEP																																									
777	46.064094	-89.02431				DEEP																																									
778	46.063671	-89.024318				DEEP																																									
779	46.063248	-89.024325				DEEP																																									
780	46.062826	-89.024333				DEEP																																									
781	46.062403	-89.02434				DEEP																																									
782	46.06198	-89.024348				DEEP																																									
783	46.061557	-89.024355				DEEP																																									
784	46.061134	-89.024363				DEEP																																									
785	46.060711	-89.02437				DEEP																																									
786	46.060288	-89.024378	11	Rock	Pole		1														1																									
787	46.059865	-89.024385	5	Rock	Pole																																									
788	46.059442	-89.024392	3	Rock	Pole																																								
789	46.058173	-89.024415	3	Rock	Pole																																									
790	46.05775	-89.024422	6	Rock	Pole		1														1																									
791	46.057327	-89.02443	7	Rock	Pole		1																				1					1													
792	46.056904	-89.024437	6	Muck	Pole		2							1																		2													1
793	46.056481	-89.024445	5	Muck	Pole		3							1																		3								1	1						1
794	46.056058	-89.024452	4	Muck	Pole		2				1			1					1												2								2	1						
795	46.055635	-89.024459	4	Muck	Pole		2				1								1												2								1	1						
796	46.055212	-89.024467	2	Rock	Pole		1						1																																	
797	46.070856	-89.023584	10	Rock	Pole																																									
798	46.070433	-89.023591				DEEP																																									
799	46.07001	-89.023598				DEEP																																									
800	46.069588	-89.023606				DEEP																																									
801	46.069165	-89.023613				DEEP																																									
802	46.068742	-89.023621				DEEP																																									
803	46.068319	-89.023628				DEEP																																									
804	46.067896	-89.023636				DEEP																																									
805	46.067473	-89.023643				DEEP																																									
806	46.06705	-89.023651				DEEP																																									
807	46.066627	-89.023658				DEEP																																									
808	46.066204	-89.023666				DEEP																																									
809	46.065781	-89.023673				DEEP																																									
810	46.065358	-89.023681				DEEP																																									
811	46.064935	-89.023688				DEEP																																									
812	46.064512	-89.023695				DEEP																																									
813	46.064089	-89.023703				DEEP																																									
814	46.063666	-89.02371				DEEP																																									
815	46.063243	-89.023718				DEEP																																									
816	46.06282	-89.023725				DEEP																																									
817	46.062397	-89.023733				DEEP																																									
818	46.061974	-89.02374				DEEP																																									
819	46.061551	-89.023748				DEEP																																									
820	46.061129	-89.023755	12	Rock	Pole		1							1																															
821	46.060706	-89.023763	5	Rock	Pole																																									
822	46.060283	-89.02377	2	Rock	Pole		1								1																													
823	46.056899	-89.02383	1	Rock	Pole		1																																1							
824	46.056053	-89.023845	3	Sand	Pole		1				1	1														1														1							
825	46.05563	-89.023852	3	Muck	Pole		2				1			1						1						1														2							
826	46.071697	-89.022961	5	Rock	Pole		1							1																															
827	46.071274	-89.022968				DEEP																																									
828	46.070851	-89.022976				DEEP																																									
829	46.070428	-89.022983				DEEP																																									
830	46.070005	-89.022991				DEEP																																									
831	46.069582	-89.022998				DEEP																																									
832	46.069159	-89.023006				DEEP																																									
833	46.068736	-89.023013				DEEP																																									
834	46.068313	-89.023021				DEEP																																									
835	46.067891	-89.023028				DEEP																																									
836	46.067468	-89.023036				DEEP																																									

sampling point	Latitude	Longitude	Depth (ft)	Dominant sediment type (M=muck, S=Sand, R=Rock)	Sampled holding rake pole (P) or rake rope (R)?	comments	Total Rake Fullness	EWM	BRASC	CERDE	CHARA	ELEAC	ELEPA	ELOCA	EQUFL	HETDU	ISO_SP	JUNPE	BIDBE	MYRSI	NAJFL	NITELLA	NUPVA	NYMOD	POTAM	POTFO	POTGR	POTNA	POTPR	POTPU	POTRI	POTRO	POTSP	POTST	POTZO	RANFM	SCHAC	SCHTA	SPAAM	UTRVU	VALAM	AQ_MOSS	FW_SPONGE	F_ALGAE	SCHSU	NAJGU	UTRMI	POT_HYB
837	46.067045	-89.023043				DEEP																																									
838	46.066622	-89.023051				DEEP																																									
839	46.066199	-89.023058				DEEP																																									
840	46.065776	-89.023065				DEEP																																									
841	46.065353	-89.023073				DEEP																																									
842	46.06493	-89.02308				DEEP																																									
843	46.064507	-89.023088				DEEP																																									
844	46.064084	-89.023095				DEEP																																									
845	46.063661	-89.023103				DEEP																																									
846	46.063238	-89.02311				DEEP																																									
847	46.062815	-89.023118				DEEP																																									
848	46.062392	-89.023125				DEEP																																									
849	46.061969	-89.023133				DEEP																																									
850	46.061546	-89.02314	15		Rope		1														1																									
851	46.061123	-89.023148	5	Sand	Pole		1				1			1							1						1																			
852	46.0607	-89.023155	2	Sand	Pole		1														1																									
853	46.056048	-89.023237	1	Sand	Pole		1		1														1	1			1														1				1	
854	46.072538	-89.022338	2	Sand	Pole		2														2																				1					
855	46.072115	-89.022346	10	Rock	Pole			V																																					
856	46.071692	-89.022353				DEEP																																									
857	46.071269	-89.022361				DEEP																																									
858	46.070846	-89.022368				DEEP																																									
859	46.070423	-89.022376				DEEP																																									
860	46.07	-89.022383				DEEP																																									
861	46.069577	-89.022391				DEEP																																									
862	46.069154	-89.022398				DEEP																																									
863	46.068731	-89.022406				DEEP																																									
864	46.068308	-89.022413				DEEP																																									
865	46.067885	-89.02242				DEEP																																									
866	46.067462	-89.022428				DEEP																																									
867	46.067039	-89.022435				DEEP																																									
868	46.066616	-89.022443				DEEP																																									
869	46.066194	-89.02245				DEEP																																									
870	46.065771	-89.022458				DEEP																																									
871	46.065348	-89.022465				DEEP																																									
872	46.064925	-89.022473				DEEP																																									
873	46.064502	-89.02248				DEEP																																									
874	46.064079	-89.022488				DEEP																																									
875	46.063656	-89.022495				DEEP																																									
876	46.063233	-89.022503				DEEP																																									
877	46.06281	-89.02251				DEEP																																									
878	46.062387	-89.022518				DEEP																																									
879	46.061964	-89.022525				DEEP																																									
880	46.061541	-89.022532	18		Rope																																									
881	46.061118	-89.02254	5	Rock	Pole		1				1																1																			
882	46.072956	-89.021723	1	Rock	Pole																																									
883	46.072533	-89.021731	9	Sand	Pole		1				1										1	1																									
884	46.07211	-89.021738				DEEP																																									
885	46.071687	-89.021746				DEEP																																									
886	46.071264	-89.021753				DEEP																																									
887	46.070841	-89.021761				DEEP																																									
888	46.070418	-89.021768				DEEP																																									
889	46.069995	-89.021776				DEEP																																									
890	46.069572	-89.021783				DEEP																																									
891	46.069149	-89.02179				DEEP																																									
892	46.068726	-89.021798				DEEP																																									
893	46.068303	-89.021805				DEEP																																									
894	46.06788	-89.021813				DEEP																																									
895	46.067457	-89.02182				DEEP																																									
896	46.067034	-89.021828				DEEP																																									
897	46.066611	-89.021835				DEEP																																									
898	46.066188	-89.021843				DEEP																																									
899	46.065765	-89.02185				DEEP																																									
900	46.065342	-89.021858				DEEP																																									
901	46.06492	-89.021865				DEEP																																									
902	46.064497	-89.021873				DEEP																																									
903	46.064074	-89.02188				DEEP																																									
904	46.063651	-89.021888				DEEP																																									
905	46.063228	-89.021895				DEEP																																									
906	46.062805	-89.021903				DEEP																																									
907	46.062382	-89.02191				DEEP																																									
908	46.061959	-89.021917				DEEP																																									
909	46.061536	-89.021925	16		Rope																																									
910	46.061113	-89.021932	2	Rock	Pole																																									
911	46.07295	-89.021115	8	Rock	Pole		1							1																															
912	46.072527	-89.021123				DEEP																																									

sampling point	Latitude	Longitude	Depth (ft)	Dominant sediment type (M=muck, S=Sand, R=Rock)	Sampled holding rake pole (P) or rake rope (R)?	comments	Total Rake Fullness	EWM	BRASC	CERDE	CHARA	ELEAC	ELEPA	ELOCA	EQUFL	HETDU	ISO_SP	JUNPE	BIDBE	MYRSI	NAJFL	NITELLA	NUPVA	NYMOD	POTAM	POTFO	POTGR	POTNA	POTPR	POTPU	POTRI	POTRO	POTSP	POTST	POTZO	RANFM	SCHAC	SCHTA	SPAAM	UTRVU	VALAM	AQ_MOSS	FW_SPONGE	F_ALGAE	SCHSU	NAJGU	UTRMI	POT_HYB
913	46.072104	-89.02113				DEEP																																									
914	46.071681	-89.021138				DEEP																																									
915	46.071259	-89.021145				DEEP																																									
916	46.070836	-89.021153				DEEP																																									
917	46.070413	-89.02116				DEEP																																									
918	46.06999	-89.021168				DEEP																																									
919	46.069567	-89.021175				DEEP																																									
920	46.069144	-89.021183				DEEP																																									
921	46.068721	-89.02119				DEEP																																									
922	46.068298	-89.021198				DEEP																																									
923	46.067875	-89.021205				DEEP																																									
924	46.067452	-89.021213				DEEP																																									
925	46.067029	-89.02122				DEEP																																									
926	46.066606	-89.021228				DEEP																																									
927	46.066183	-89.021235				DEEP																																									
928	46.06576	-89.021243				DEEP																																									
929	46.065337	-89.02125				DEEP																																									
930	46.064914	-89.021258				DEEP																																									
931	46.064491	-89.021265				DEEP																																									
932	46.064068	-89.021273				DEEP																																									
933	46.063645	-89.02128				DEEP																																									
934	46.063223	-89.021287				DEEP																																									
935	46.0628	-89.021295				DEEP																																									
936	46.062377	-89.021302				DEEP																																									
937	46.061954	-89.02131				DEEP																																									
938	46.061531	-89.021317	6	Muck	Pole		2	2		1				1													2																				
939	46.073368	-89.0205	1	Rock	Pole		1														1																										
940	46.072945	-89.020508	16		Rope																																										
941	46.072522	-89.020515				DEEP																																									
942	46.072099	-89.020523				DEEP																																									
943	46.071676	-89.02053				DEEP																																									
944	46.071253	-89.020538				DEEP																																									
945	46.07083	-89.020545				DEEP																																									
946	46.070407	-89.020553				DEEP																																									
947	46.069984	-89.02056				DEEP																																									
948	46.069562	-89.020568				DEEP																																									
949	46.069139	-89.020575				DEEP																																									
950	46.068716	-89.020583				DEEP																																									
951	46.068293	-89.02059				DEEP																																									
952	46.06787	-89.020598				DEEP																																									
953	46.067447	-89.020605				DEEP																																									
954	46.067024	-89.020613				DEEP																																									
955	46.066601	-89.02062				DEEP																																									
956	46.066178	-89.020628				DEEP																																									
957	46.065755	-89.020635				DEEP																																									
958	46.065332	-89.020642				DEEP																																									
959	46.064909	-89.02065				DEEP																																									
960	46.064486	-89.020657				DEEP																																									
961	46.064063	-89.020665				DEEP																																									
962	46.06364	-89.020672				DEEP																																									
963	46.063217	-89.02068				DEEP																																									
964	46.062794	-89.020687				DEEP																																									
965	46.062371	-89.020695				DEEP																																									
966	46.061948	-89.020702	14		Rope																																										
967	46.061525	-89.02071	2	Rock	Pole		1						1																																		
968	46.07294	-89.0199	15		Rope																																										
969	46.072517	-89.019908				DEEP																																									
970	46.072094	-89.019915				DEEP																																									
971	46.071671	-89.019923				DEEP																																									
972	46.071248	-89.01993				DEEP																																									
973	46.070825	-89.019938				DEEP																																									
974	46.070402	-89.019945				DEEP																																									
975	46.069979	-89.019953				DEEP																																									
976	46.069556	-89.01996				DEEP																																									
977	46.069133	-89.019968				DEEP																																									
978	46.06871	-89.019975				DEEP																																									
979	46.068287	-89.019982				DEEP																																									
980	46.067865	-89.01999				DEEP																																									
981	46.067442	-89.019997				DEEP																																									
982	46.067019	-89.020005				DEEP																																									
983	46.066596	-89.020012				DEEP																																									
984	46.066173	-89.02002				DEEP																																									
985	46.06575	-89.020027				DEEP																																									
986	46.065327	-89.020035				DEEP																																									
987	46.064904	-89.020042				DEEP																																									
988	46.064481	-89.02005				DEEP																																									

Sampling point	Latitude	Longitude	Depth (ft)	Dominant sediment type (M=muck, S=Sand, R=Rock)	Sampled holding rake pole (P) or rake rope (R)?	comments	Total Rake Fullness	EWM	BRASC	CERDE	CHARA	ELEAC	ELEPA	ELOCA	EQUFL	HETDU	ISO_SP	JUNPE	BIDBE	MYRSI	NAJFL	NITELLA	NUPVA	NYMOD	POTAM	POTFO	POTGR	POTNA	POTPR	POTPU	POTRI	POTRO	POTSP	POTST	POTZO	RANFM	SCHAC	SCHTA	SPAAM	UTRVU	VALAM	AQ_MOSS	FW_SPONGE	F_ALGAE	SCHSU	NAJGU	UTRMI	POT_HYB
989	46.064058	-89.020057				DEEP																																									
990	46.063635	-89.020065				DEEP																																									
991	46.063212	-89.020072				DEEP																																									
992	46.062789	-89.02008				DEEP																																									
993	46.062366	-89.020087				DEEP																																									
994	46.061943	-89.020095	6	Muck	Pole		2				1			1																														2		
995	46.073358	-89.019285	3	Sand	Pole		2							1																2															
996	46.072935	-89.019292	21		Rope																																									
997	46.072512	-89.0193				DEEP																																									
998	46.072089	-89.019307				DEEP																																									
999	46.071666	-89.019315				DEEP																																									
1000	46.071243	-89.019322				DEEP																																									
1001	46.07082	-89.01933				DEEP																																									
1002	46.070397	-89.019337				DEEP																																									
1003	46.069974	-89.019345				DEEP																																									
1004	46.069551	-89.019352				DEEP																																									
1005	46.069128	-89.01936				DEEP																																									
1006	46.068705	-89.019367				DEEP																																									
1007	46.068282	-89.019375				DEEP																																									
1008	46.067859	-89.019382				DEEP																																									
1009	46.067436	-89.01939				DEEP																																									
1010	46.067013	-89.019397				DEEP																																									
1011	46.06659	-89.019405				DEEP																																									
1012	46.066168	-89.019412				DEEP																																									
1013	46.065745	-89.01942				DEEP																																									
1014	46.065322	-89.019427				DEEP																																									
1015	46.064899	-89.019435				DEEP																																									
1016	46.064476	-89.019442				DEEP																																									
1017	46.064053	-89.01945				DEEP																																									
1018	46.06363	-89.019457				DEEP																																									
1019	46.063207	-89.019465				DEEP																																									
1020	46.062784	-89.019472				DEEP																																									
1021	46.062361	-89.01948				DEEP																																									
1022	46.061938	-89.019487	6	Rock	Pole		1							1												1																			
1023	46.074621	-89.018655	2	Rock	Pole		1					1				1						1																							
1024	46.074198	-89.018662	13	Sand	Pole		1															1										1	1											
1025	46.073775	-89.01867	21		Rope																																									
1026	46.073352	-89.018677	31			DEEP																																									
1027	46.072929	-89.018685				DEEP																																									
1028	46.072507	-89.018692				DEEP																																									
1029	46.072084	-89.0187				DEEP																																									
1030	46.071661	-89.018707				DEEP																																									
1031	46.071238	-89.018715				DEEP																																									
1032	46.070815	-89.018722				DEEP																																									
1033	46.070392	-89.01873				DEEP																																									
1034	46.069969	-89.018737				DEEP																																									
1035	46.069546	-89.018745				DEEP																																									
1036	46.069123	-89.018752				DEEP																																									
1037	46.0687	-89.01876				DEEP																																									
1038	46.068277	-89.018767				DEEP																																									
1039	46.067854	-89.018775				DEEP																																									
1040	46.067431	-89.018782				DEEP																																									
1041	46.067008	-89.01879				DEEP																																									
1042	46.066585	-89.018797				DEEP																																									
1043	46.066162	-89.018805				DEEP																																									
1044	46.065739	-89.018812				DEEP																																									
1045	46.065316	-89.01882				DEEP																																									
1046	46.064893	-89.018827				DEEP																																									
1047	46.064471	-89.018835				DEEP																																									
1048	46.064048	-89.018842				DEEP																																									
1049	46.063625	-89.01885				DEEP																																									
1050	46.063202	-89.018857				DEEP																																									
1051	46.062779	-89.018865				DEEP																																									
1052	46.062356	-89.018872				DEEP																																									
1053	46.061933	-89.01888	2	Rock	Pole		1																																1							
1054	46.075039	-89.01804	1	Sand	Pole		1																																			1					
1055	46.074616	-89.018047	18		Rope		1							1																																
1056	46.074193	-89.018055	39			DEEP																																									
1057	46.07377	-89.018062				DEEP																																									
1058	46.073347	-89.01807				DEEP																																									
1059	46.072924	-89.018077				DEEP																																									
1060	46.072501	-89.018085				DEEP																																									
1061	46.072078	-89.018092				DEEP																																									
1062	46.071655	-89.0181				DEEP																																									
1063	46.071232	-89.018107				DEEP																																									
1064	46.07081	-89.018115				DEEP																																									

sampling point	Latitude	Longitude	Depth (ft)	Dominant sediment type (M=muck, S=Sand, R=Rock)	Sampled holding rake pole (P) or rake rope (R)?	comments	Total Rake Fullness	EWM	BRASC	CERDE	CHARA	ELEAC	ELEPA	ELOCA	EQUFL	HETDU	ISO_SP	JUNPE	BIDBE	MYRSI	NAJFL	NITELLA	NUPVA	NYMOD	POTAM	POTFO	POTGR	POTNA	POTPR	POTPU	POTRI	POTRO	POTSP	POTST	POTZO	RANFM	SCHAC	SCHTA	SPAAM	UTRVU	VALAM	AQ_MOSS	FW_SPONGE	F_ALGAE	SCHSU	NAJGU	UTRMI	POT_HYB
1065	46.070387	-89.018122				DEEP																																									
1066	46.069964	-89.01813				DEEP																																									
1067	46.069541	-89.018137				DEEP																																									
1068	46.069118	-89.018145				DEEP																																									
1069	46.068695	-89.018152				DEEP																																									
1070	46.068272	-89.01816				DEEP																																									
1071	46.067849	-89.018167				DEEP																																									
1072	46.067426	-89.018175				DEEP																																									
1073	46.067003	-89.018182				DEEP																																									
1074	46.06658	-89.01819	18		Rope																																									
1075	46.066157	-89.018197				DEEP																																									
1076	46.065734	-89.018205				DEEP																																									
1077	46.065311	-89.018212				DEEP																																									
1078	46.064888	-89.01822				DEEP																																									
1079	46.064465	-89.018227				DEEP																																									
1080	46.064042	-89.018235				DEEP																																									
1081	46.063619	-89.018242				DEEP																																									
1082	46.063196	-89.01825				DEEP																																									
1083	46.062773	-89.018257				DEEP																																									
1084	46.062351	-89.018265	9	Rock	Pole		1							1						1																										
1085	46.075034	-89.017432	10	Rock	Pole																																									
1086	46.074611	-89.017439				DEEP																																									
1087	46.074188	-89.017447				DEEP																																									
1088	46.073765	-89.017454				DEEP																																									
1089	46.073342	-89.017462				DEEP																																									
1090	46.072919	-89.017469				DEEP																																									
1091	46.072496	-89.017477				DEEP																																									
1092	46.072073	-89.017484				DEEP																																									
1093	46.07165	-89.017492				DEEP																																									
1094	46.071227	-89.017499				DEEP																																									
1095	46.070804	-89.017507				DEEP																																									
1096	46.070381	-89.017514				DEEP																																									
1097	46.069958	-89.017522				DEEP																																									
1098	46.069535	-89.017529				DEEP																																									
1099	46.069113	-89.017537				DEEP																																									
1100	46.06869	-89.017544	2	Rock	Pole																																									
1101	46.066998	-89.017574	3	Rock	Pole																																									
1102	46.066575	-89.017582	5	Rock	Pole																																									
1103	46.066152	-89.017589	6	Rock	Pole																																									
1104	46.065729	-89.017597				DEEP																																									
1105	46.065306	-89.017604				DEEP																																									
1106	46.064883	-89.017612				DEEP																																									
1107	46.06446	-89.017619				DEEP																																									
1108	46.064037	-89.017627				DEEP																																									
1109	46.063614	-89.017634				DEEP																																									
1110	46.063191	-89.017642				DEEP																																									
1111	46.062768	-89.017649				DEEP																																									
1112	46.062345	-89.017657	5	Rock	Pole		2																				2																			
1113	46.075452	-89.016817	2	Rock	Pole		1					1																																			
1114	46.075029	-89.016824	28			DEEP																																									
1115	46.074606	-89.016832				DEEP																																									
1116	46.074183	-89.016839				DEEP																																									
1117	46.07376	-89.016847				DEEP																																									
1118	46.073337	-89.016854				DEEP																																									
1119	46.072914	-89.016862				DEEP																																									
1120	46.072491	-89.016869				DEEP																																									
1121	46.072068	-89.016877				DEEP																																									
1122	46.071645	-89.016884				DEEP																																									
1123	46.071222	-89.016892				DEEP																																									
1124	46.070799	-89.016899				DEEP																																									
1125	46.070376	-89.016907				DEEP																																									
1126	46.069953	-89.016914				DEEP																																									
1127	46.06953	-89.016922				DEEP																																									
1128	46.065724	-89.016989	3	Rock	Pole																																									
1129	46.065301	-89.016997	5	Rock	Pole																																									
1130	46.064878	-89.017004	10	Rock	Pole		2							2																															
1131	46.064455	-89.017012				DEEP																																									
1132	46.064032	-89.017019				DEEP																																									
1133	46.063609	-89.017027				DEEP																																									
1134	46.063186	-89.017034				DEEP																																									
1135	46.062763	-89.017042	14		Rope		1							1									1										1												
1136	46.06234	-89.017049	4	Rock	Pole		1				1																											1							
1137	46.075446	-89.016209	22																																										
1138	46.075023	-89.016216				DEEP																																									
1139	46.0746	-89.016224				DEEP																																									
1140	46.074177	-89.016231				DEEP																																									

sampling point	Latitude	Longitude	Depth (ft)	Dominant sediment type (M=muck, S=Sand, R=Rock)	Sampled holding rake pole (P) or rake rope (R)?	comments	Total Rake Fullness	EWM	BRASC	CERDE	CHARA	ELEAC	ELEPA	ELOCA	EQUFL	HETDU	ISO_SP	JUNPE	BIDBE	MYRSI	NAJFL	NITELLA	NUPVA	NYMOD	POTAM	POTFO	POTGR	POTNA	POTPR	POTPU	POTRI	POTRO	POTSP	POTST	POTZO	RANFM	SCHAC	SCHTA	SPAAM	UTRVU	VALAM	AQ_MOSS	FW_SPONGE	F_ALGAE	SCHSU	NAJGU	UTRMI	POT_HYB
1141	46.073754	-89.016239				DEEP																																									
1142	46.073332	-89.016246				DEEP																																									
1143	46.072909	-89.016254				DEEP																																									
1144	46.072486	-89.016261				DEEP																																									
1145	46.072063	-89.016269				DEEP																																									
1146	46.07164	-89.016277				DEEP																																									
1147	46.071217	-89.016284				DEEP																																									
1148	46.070794	-89.016292				DEEP																																									
1149	46.070371	-89.016299				DEEP																																									
1150	46.069948	-89.016307				DEEP																																									
1151	46.069525	-89.016314	1	Rock	Pole		1														1										1									1						
1152	46.06445	-89.016404	2	Rock	Pole		1															1																								
1153	46.064027	-89.016412	5	Rock	Pole		2							1							1									1		1											1		
1154	46.063604	-89.016419	5	Rock	Pole		1				1																1																		
1155	46.063181	-89.016427	5	Sand	Pole		2				2																																1		
1156	46.062758	-89.016434	4	Sand	Pole		1				1																1																1		
1157	46.062335	-89.016442				DOCK																																								
1158	46.076287	-89.015586	1	Sand	Pole		1															1																								
1159	46.075864	-89.015594	17		Rope																																									
1160	46.075441	-89.015601				DEEP																																									
1161	46.075018	-89.015609				DEEP																																									
1162	46.074595	-89.015616				DEEP																																									
1163	46.074172	-89.015624				DEEP																																									
1164	46.073749	-89.015631				DEEP																																									
1165	46.073326	-89.015639				DEEP																																									
1166	46.072903	-89.015646				DEEP																																									
1167	46.07248	-89.015654				DEEP																																									
1168	46.072057	-89.015661				DEEP																																									
1169	46.071635	-89.015669				DEEP																																									
1170	46.071212	-89.015676				DEEP																																									
1171	46.070789	-89.015684				DEEP																																									
1172	46.070366	-89.015691				DEEP																																									
1173	46.069943	-89.015699	6	Rock	Pole		2							1																						1									
1174	46.076282	-89.014978	15		Rope																																									
1175	46.075859	-89.014986				DEEP																																									
1176	46.075436	-89.014993				DEEP																																									
1177	46.075013	-89.015001				DEEP																																									
1178	46.07459	-89.015008				DEEP																																									
1179	46.074167	-89.015016				DEEP																																									
1180	46.073744	-89.015024				DEEP																																									
1181	46.073321	-89.015031				DEEP																																									
1182	46.072898	-89.015039				DEEP																																									
1183	46.072475	-89.015046				DEEP																																									
1184	46.072052	-89.015054				DEEP																																									
1185	46.071629	-89.015061				DEEP																																									
1186	46.071206	-89.015069				DEEP																																									
1187	46.070783	-89.015076				DEEP																																									
1188	46.07036	-89.015084				DEEP																																									
1189	46.069937	-89.015091				TERRESTRIAL																																								
1190	46.076699	-89.014363	7	Rock	Pole		1														1	1				1															1					
1191	46.076276	-89.014371				DEEP																																									
1192	46.075854	-89.014378				DEEP																																									
1193	46.075431	-89.014386				DEEP																																									
1194	46.075008	-89.014393				DEEP																																									
1195	46.074585	-89.014401				DEEP																																									
1196	46.074162	-89.014408				DEEP																																									
1197	46.073739	-89.014416				DEEP																																									
1198	46.073316	-89.014423				DEEP																																									
1199	46.072893	-89.014431				DEEP																																									
1200	46.07247	-89.014438				DEEP																																									
1201	46.072047	-89.014446				DEEP																																									
1202	46.071624	-89.014453				DEEP																																									
1203	46.071201	-89.014461				DEEP																																									
1204	46.070778	-89.014469				DEEP																																									
1205	46.070355	-89.014476				DEEP																																									
1206	46.077117	-89.013748	2	Rock	Pole																																									
1207	46.076694	-89.013755	24		Rope																																									
1208	46.076271	-89.013763				DEEP																																									
1209	46.075848	-89.01377				DEEP																																									
1210	46.075425	-89.013778				DEEP																																									
1211	46.075002	-89.013786				DEEP																																									
1212	46.074579	-89.013793				DEEP																																									
1213	46.074156	-89.013801				DEEP																																									
1214	46.073734	-89.013808				DEEP																																									
1215	46.073311	-89.013816				DEEP																																									
1216	46.072888	-89.013823				DEEP																																									

Sampling point	Latitude	Longitude	Depth (ft)	Dominant sediment type (M=muck, S=Sand, R=Rock)	Sampled holding rake pole (P) or rake rope (R)?	comments	Total Rake Fullness	EWM	BRASC	CERDE	CHARA	ELEAC	ELEPA	ELOCA	EQUFL	HETDU	ISO_SP	JUNPE	BIDBE	MYRSI	NAJFL	NITELLA	NUPVA	NYMOD	POTAM	POTFO	POTGR	POTNA	POTPR	POTPU	POTRI	POTRO	POTSP	POTST	POTZO	RANFM	SCHAC	SCHTA	SPAAM	UTRVU	VALAM	AQ_MOSS	FW_SPONGE	F_ALGAE	SCHSU	NAJGU	UTRMI	POT_HYB
1217	46.072465	-89.013831				DEEP																																									
1218	46.072042	-89.013838				DEEP																																									
1219	46.071619	-89.013846				DEEP																																									
1220	46.071196	-89.013853				DEEP																																									
1221	46.070773	-89.013861				DEEP																																									
1222	46.07035	-89.013868	13	Rock	Pole																																									
1223	46.077535	-89.013133	1	Sand	Pole		1					1					1																													
1224	46.077112	-89.01314	6	Rock	Pole		1														1																									
1225	46.076689	-89.013148				DEEP																																									
1226	46.076266	-89.013155				DEEP																																									
1227	46.075843	-89.013163				DEEP																																									
1228	46.07542	-89.01317				DEEP																																									
1229	46.074997	-89.013178				DEEP																																									
1230	46.074574	-89.013185				DEEP																																									
1231	46.074151	-89.013193				DEEP																																									
1232	46.073728	-89.0132				DEEP																																									
1233	46.073305	-89.013208				DEEP																																									
1234	46.072882	-89.013216				DEEP																																									
1235	46.072459	-89.013223				DEEP																																									
1236	46.072037	-89.013231				DEEP																																									
1237	46.071614	-89.013238				DEEP																																									
1238	46.071191	-89.013246				DEEP																																									
1239	46.070768	-89.013253				DEEP																																									
1240	46.070345	-89.013261				TERRESTRIAL																																									
1241	46.07753	-89.012525	5	Sand	Pole		1														1																									
1242	46.077107	-89.012532				DEEP																																									
1243	46.076684	-89.01254				DEEP																																									
1244	46.076261	-89.012547				DEEP																																									
1245	46.075838	-89.012555				DEEP																																									
1246	46.075415	-89.012563				DEEP																																									
1247	46.074992	-89.01257				DEEP																																									
1248	46.074569	-89.012578				DEEP																																									
1249	46.074146	-89.012585				DEEP																																									
1250	46.073723	-89.012593				DEEP																																									
1251	46.0733	-89.0126				DEEP																																									
1252	46.072877	-89.012608				DEEP																																									
1253	46.072454	-89.012615				DEEP																																									
1254	46.072031	-89.012623				DEEP																																									
1255	46.071608	-89.01263				DEEP																																									
1256	46.071185	-89.012638				DEEP																																									
1257	46.070762	-89.012646	10	Rock	Pole		1							1																															
1258	46.070339	-89.012653				TERRESTRIAL																																									
1259	46.077524	-89.011917	19																																											
1260	46.077101	-89.011925				DEEP																																									
1261	46.076678	-89.011932				DEEP																																									
1262	46.076255	-89.01194				DEEP																																									
1263	46.075833	-89.011947				DEEP																																									
1264	46.07541	-89.011955				DEEP																																									
1265	46.074987	-89.011962				DEEP																																									
1266	46.074564	-89.01197				DEEP																																									
1267	46.074141	-89.011977				DEEP																																									
1268	46.073718	-89.011985				DEEP																																									
1269	46.073295	-89.011993				DEEP																																									
1270	46.072872	-89.012				DEEP																																									
1271	46.072449	-89.012008				DEEP																																									
1272	46.072026	-89.012015				DEEP																																									
1273	46.071603	-89.012023				DEEP																																									
1274	46.07118	-89.01203				DEEP																																									
1275	46.070757	-89.012038	2	Rock	Pole		1														1																									
1276	46.077942	-89.011302	5	Sand	Pole		2														1					1						1													
1277	46.077519	-89.011309				DEEP																																									
1278	46.077096	-89.011317				DEEP																																									
1279	46.076673	-89.011324				DEEP																																									
1280	46.07625	-89.011332				DEEP																																									
1281	46.075827	-89.01134				DEEP																																									
1282	46.075404	-89.011347				DEEP																																									
1283	46.074981	-89.011355				DEEP																																									
1284	46.074558	-89.011362				DEEP																																									
1285	46.074135	-89.01137				DEEP																																									
1286	46.073713	-89.011377				DEEP																																									
1287	46.07329	-89.011385				DEEP																																									
1288	46.072867	-89.011392				DEEP																																									
1289	46.072444	-89.0114				DEEP																																									
1290	46.072021	-89.011408				DEEP																																									
1291	46.071598	-89.011415				DEEP																																									
1292	46.071175	-89.011423				DEEP																																									

Sampling point	Latitude	Longitude	Depth (ft)	Dominant sediment type (M=muck, S=Sand, R=Rock)	Sampled holding rake pole (P) or rake rope (R)?	comments	Total Rake Fullness	EWM	BRASC	CERDE	CHARA	ELEAC	ELEPA	ELOCA	EQUFL	HETDU	ISO_SP	JUNPE	BIDBE	MYRSI	NAJFL	NITELLA	NUPVA	NYMOD	POTAM	POTFO	POTGR	POTNA	POTPR	POTPU	POTRI	POTRO	POTSP	POTST	POTZO	RANFM	SCHAC	SCHTA	SPAAM	UTRVU	VALAM	AQ_MOSS	FW_SPONGE	F_ALGAE	SCHSU	NAJGU	UTRMI	POT_HYB
1293	46.070752	-89.01143	4	Rock	Pole																																									
1294	46.070329	-89.011438				TERRESTRIAL																																										
1295	46.077937	-89.010694	24		Rope																																										
1296	46.077514	-89.010702				DEEP																																									
1297	46.077091	-89.010709				DEEP																																									
1298	46.076668	-89.010717				DEEP																																									
1299	46.076245	-89.010724				DEEP																																									
1300	46.075822	-89.010732				DEEP																																									
1301	46.075399	-89.010739				DEEP																																									
1302	46.074976	-89.010747				DEEP																																									
1303	46.074553	-89.010755				DEEP																																									
1304	46.07413	-89.010762				DEEP																																									
1305	46.073707	-89.01077				DEEP																																									
1306	46.073284	-89.010777				DEEP																																									
1307	46.072861	-89.010785				DEEP																																									
1308	46.072438	-89.010792				DEEP																																									
1309	46.072015	-89.0108				DEEP																																									
1310	46.071593	-89.010807				DEEP																																									
1311	46.07117	-89.010815				DEEP																																									
1312	46.070747	-89.010823	4	Rock	Pole		1				1										1																									
1313	46.078354	-89.010079	7	Rock	Pole		1				1										1																									
1314	46.077931	-89.010086				DEEP																																									
1315	46.077509	-89.010094				DEEP																																									
1316	46.077086	-89.010101				DEEP																																									
1317	46.076663	-89.010109				DEEP																																									
1318	46.07624	-89.010117				DEEP																																									
1319	46.075817	-89.010124				DEEP																																									
1320	46.075394	-89.010132				DEEP																																									
1321	46.074971	-89.010139				DEEP																																									
1322	46.074548	-89.010147				DEEP																																									
1323	46.074125	-89.010154				DEEP																																									
1324	46.073702	-89.010162				DEEP																																									
1325	46.073279	-89.01017				DEEP																																									
1326	46.072856	-89.010177				DEEP																																									
1327	46.072433	-89.010185				DEEP																																									
1328	46.07201	-89.010192				DEEP																																									
1329	46.071587	-89.0102				DEEP																																									
1330	46.071164	-89.010207	5	Rock	Pole		2				1										1																									
1331	46.070741	-89.010215				TERRESTRIAL																																									
1332	46.078772	-89.009463	3	Sand	Pole		1				1	1									1																									
1333	46.078349	-89.009471	21		Rope																																									
1334	46.077926	-89.009479				DEEP																																									
1335	46.077503	-89.009486				DEEP																																									
1336	46.07708	-89.009494				DEEP																																									
1337	46.076657	-89.009501				DEEP																																									
1338	46.076234	-89.009509				DEEP																																									
1339	46.075811	-89.009516				DEEP																																									
1340	46.075389	-89.009524				DEEP																																									
1341	46.074966	-89.009532				DEEP																																									
1342	46.074543	-89.009539				DEEP																																									
1343	46.07412	-89.009547				DEEP																																									
1344	46.073697	-89.009554				DEEP																																									
1345	46.073274	-89.009562				DEEP																																									
1346	46.072851	-89.009569				DEEP																																									
1347	46.072428	-89.009577				DEEP																																									
1348	46.072005	-89.009585				DEEP																																									
1349	46.071582	-89.009592	12	Rock	Pole																																								
1350	46.071159	-89.0096	2	Rock	Pole																																								
1351	46.078767	-89.008856	16		Rope																																								
1352	46.078344	-89.008863				DEEP																																									
1353	46.077921	-89.008871				DEEP																																									
1354	46.077498	-89.008878				DEEP																																									
1355	46.077075	-89.008886				DEEP																																									
1356	46.076652	-89.008894				DEEP																																									
1357	46.076229	-89.008901				DEEP																																									
1358	46.075806	-89.008909				DEEP																																									
1359	46.075383	-89.008916				DEEP																																									
1360	46.07496	-89.008924				DEEP																																									
1361	46.074537	-89.008931				DEEP																																									
1362	46.074114	-89.008939				DEEP																																									
1363	46.073691	-89.008947				DEEP																																									
1364	46.073269	-89.008954				DEEP																																									
1365	46.072846	-89.008962				DEEP																																									
1366	46.072423	-89.008969				DEEP																																									
1367	46.072	-89.008977				DEEP																																									
1368	46.071577	-89.008984	1	Rock	Pole																																								

Sampling point	Latitude	Longitude	Depth (ft)	Dominant sediment type (M=muck, S=Sand, R=Rock)	Sampled holding rake pole (P) or rake rope (R)?	comments	Total Rake Fullness	EWM	BRASC	CERDE	CHARA	ELEAC	ELEPA	ELOCA	EQUFL	HETDU	ISO_SP	JUNPE	BIDBE	MYRSI	NAJFL	NITELLA	NUPVA	NYMOD	POTAM	POTFO	POTGR	POTNA	POTPR	POTPU	POTRI	POTRO	POTSP	POTST	POTZO	RANFM	SCHAC	SCHTA	SPAAM	UTRVU	VALAM	AQ_MOSS	FW_SPONGE	F_ALGAE	SCHSU	NAJGU	UTRMI	POT_HYB
1369	46.078762	-89.008248	14		Rope		1																								1																
1370	46.078339	-89.008256				DEEP																																										
1371	46.077916	-89.008263				DEEP																																										
1372	46.077493	-89.008271				DEEP																																										
1373	46.07707	-89.008278				DEEP																																										
1374	46.076647	-89.008286				DEEP																																										
1375	46.076224	-89.008293				DEEP																																										
1376	46.075801	-89.008301				DEEP																																										
1377	46.075378	-89.008309				DEEP																																										
1378	46.074955	-89.008316				DEEP																																										
1379	46.074532	-89.008324				DEEP																																										
1380	46.074109	-89.008331				DEEP																																										
1381	46.073686	-89.008339				DEEP																																										
1382	46.073263	-89.008346				DEEP																																										
1383	46.07284	-89.008354				DEEP																																										
1384	46.072417	-89.008362	17		Rope																																										
1385	46.071994	-89.008369	2	Rock	Pole		1														1																									
1386	46.078756	-89.00764	5	Rock	Pole																																										
1387	46.078333	-89.007648				DEEP																																										
1388	46.07791	-89.007655				DEEP																																										
1389	46.077487	-89.007663				DEEP																																										
1390	46.077065	-89.007671				DEEP																																										
1391	46.076642	-89.007678				DEEP																																										
1392	46.076219	-89.007686				DEEP																																										
1393	46.075796	-89.007693				DEEP																																										
1394	46.075373	-89.007701				DEEP																																										
1395	46.07495	-89.007708				DEEP																																										
1396	46.074527	-89.007716				DEEP																																										
1397	46.074104	-89.007724				DEEP																																										
1398	46.073681	-89.007731				DEEP																																										
1399	46.073258	-89.007739				DEEP																																										
1400	46.072835	-89.007746	17		Rope																																										
1401	46.072412	-89.007754	1	Rock	Pole																																										
1402	46.078328	-89.00704	23		Rope																																										
1403	46.077905	-89.007048				DEEP																																										
1404	46.077482	-89.007055				DEEP																																										
1405	46.077059	-89.007063				DEEP																																										
1406	46.076636	-89.00707				DEEP																																										
1407	46.076213	-89.007078				DEEP																																										
1408	46.07579	-89.007086				DEEP																																										
1409	46.075367	-89.007093				DEEP																																										
1410	46.074945	-89.007101				DEEP																																										
1411	46.074522	-89.007108				DEEP																																										
1412	46.074099	-89.007116				DEEP																																										
1413	46.073676	-89.007123				DEEP																																										
1414	46.073253	-89.007131	12	Rock	Pole		1														1																									
1415	46.078323	-89.006432	20		Rope																																										
1416	46.0779	-89.00644				DEEP																																										
1417	46.077477	-89.006447				DEEP																																										
1418	46.077054	-89.006455				DEEP																																										
1419	46.076631	-89.006463				DEEP																																										
1420	46.076208	-89.00647				DEEP																																										
1421	46.075785	-89.006478				DEEP																																										
1422	46.075362	-89.006485				DEEP																																										
1423	46.074939	-89.006493				DEEP																																										
1424	46.074516	-89.006501				DEEP																																										
1425	46.074093	-89.006508				DEEP																																										
1426	46.07367	-89.006516	17		Rope																																										
1427	46.078318	-89.005825	16		Rope																																										
1428	46.077895	-89.005832				DEEP																																										
1429	46.077472	-89.00584				DEEP																																										
1430	46.077049	-89.005847				DEEP																																										
1431	46.076626	-89.005855				DEEP																																										
1432	46.076203	-89.005862				DEEP																																										
1433	46.07578	-89.00587				DEEP																																										
1434	46.075357	-89.005878				DEEP																																										
1435	46.074934	-89.005885				DEEP																																										
1436	46.074511	-89.005893				DEEP																																										
1437	46.074088	-89.0059				DEEP																																										
1438	46.073665	-89.005908				TERRESTRIAL																																									
1439	46.078312	-89.005217	9	Rock	Pole		2																1							2		1													
1440	46.077889	-89.005224				DEEP																																										
1441	46.077466	-89.005232				DEEP																																										
1442	46.077043	-89.00524				DEEP																																										
1443	46.07662	-89.005247				DEEP																																										
1444	46.076197	-89.005255				DEEP																																										

sampling point	Latitude	Longitude	Depth (ft)	Dominant sediment type (M=muck, S=Sand, R=Rock)	Sampled holding rake pole (P) or rake rope (R)?	comments	Total Rake Fullness	EWM	BRASC	CERDE	CHARA	ELEAC	ELEPA	ELOCA	EQUFL	HETDU	ISO_SP	JUNPE	BIDBE	MYRSI	NAJFL	NITELLA	NUPVA	NYMOD	POTAM	POTFO	POTGR	POTNA	POTPR	POTPU	POTRI	POTRO	POTSP	POTST	POTZO	RANFM	SCHAC	SCHTA	SPAAM	UTRVU	VALAM	AQ_MOSS	FW_SPONGE	F_ALGAE	SCHSU	NAJGU	UTRMI	POT_HYB
1445	46.075775	-89.005262				DEEP																																									
1446	46.075352	-89.00527				DEEP																																									
1447	46.074929	-89.005278				DEEP																																									
1448	46.074506	-89.005285				DEEP																																									
1449	46.074083	-89.005293	6	Sand	Pole																																										
1450	46.078307	-89.004609	4	Rock	Pole																	1																								
1451	46.077884	-89.004617				DEEP																																									
1452	46.077461	-89.004624				DEEP																																									
1453	46.077038	-89.004632				DEEP																																									
1454	46.076615	-89.004639				DEEP																																									
1455	46.076192	-89.004647				DEEP																																									
1456	46.075769	-89.004655				DEEP																																									
1457	46.075346	-89.004662				DEEP																																									
1458	46.074923	-89.00467				DEEP																																									
1459	46.0745	-89.004677	18		Rope																																									
1460	46.077879	-89.004009				DEEP																																									
1461	46.077456	-89.004016				DEEP																																									
1462	46.077033	-89.004024				DEEP																																									
1463	46.07661	-89.004032				DEEP																																									
1464	46.076187	-89.004039				DEEP																																									
1465	46.075764	-89.004047				DEEP																																									
1466	46.075341	-89.004055				DEEP																																									
1467	46.074918	-89.004062				DEEP																																									
1468	46.074495	-89.00407	6	Rock	Pole																																									
1469	46.077873	-89.003401				DEEP																																									
1470	46.07745	-89.003409				DEEP																																									
1471	46.077028	-89.003416				DEEP																																									
1472	46.076605	-89.003424				DEEP																																									
1473	46.076182	-89.003432				DEEP																																									
1474	46.075759	-89.003439				DEEP																																									
1475	46.075336	-89.003447				DEEP																																									
1476	46.074913	-89.003454				DEEP																																									
1477	46.07449	-89.003462				TERRESTRIAL																																									
1478	46.078291	-89.002786	8	Sand	Pole		2															2									1				1											
1479	46.077868	-89.002793				DEEP																																									
1480	46.077445	-89.002801				DEEP																																									
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1483	46.076176	-89.002824				DEEP																																									
1484	46.075753	-89.002831				DEEP																																									
1485	46.07533	-89.002839				DEEP																																									
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1489	46.07744	-89.002193				DEEP																																									
1490	46.077017	-89.002201				DEEP																																									
1491	46.076594	-89.002209				DEEP																																									
1492	46.076171	-89.002216				DEEP																																									
1493	46.075748	-89.002224				DEEP																																									
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1495	46.074902	-89.002239				TERRESTRIAL																																									
1496	46.078703	-89.001563	4	Rock	Pole		1				1											1											1											
1497	46.07828	-89.00157				DEEP																																									
1498	46.077857	-89.001578				DEEP																																									
1499	46.077435	-89.001586				DEEP																																									
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1501	46.076589	-89.001601				DEEP																																									
1502	46.076166	-89.001608				DEEP																																									
1503	46.075743	-89.001616				DEEP																																									
1504	46.07532	-89.001624	4	Rock	Pole		1															1																							
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1506	46.078275	-89.000963				DEEP																																									
1507	46.077852	-89.00097				DEEP																																									
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1509	46.077006	-89.000985				DEEP																																									
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1514	46.079116	-89.000339	6	Sand	Pole		2															1				1					2														
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1517	46.077847	-89.000362				DEEP																																									
1518	46.077424	-89.00037				DEEP																																									
1519	46.077001	-89.000378				DEEP																																									
1520	46.076578	-89.000385				DEEP																																									

sampling point	Latitude	Longitude	Depth (ft)	Dominant sediment type (M=muck, S=Sand, R=Rock)	Sampled holding rake pole (P) or rake rope (R)?	comments	Total Rake Fullness	EWM	BRASC	CERDE	CHARA	ELEAC	ELEPA	ELOCA	EQUFL	HETDU	ISO_SP	JUNPE	BIDBE	MYRSI	NAJFL	NITELLA	NUPVA	NYMOD	POTAM	POTFO	POTGR	POTNA	POTPR	POTPU	POTRI	POTRO	POTSP	POTST	POTZO	RANFM	SCHAC	SCHTA	SPAAM	UTRVU	VALAM	AQ_MOSS	FW_SPONGE	F_ALGAE	SCHSU	NAJGU	UTRMI	POT_HYB
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1523	46.075309	-89.000408	1	Rock	Pole		1														1					1																				
1524	46.07911	-88.999732	9	Rock	Pole		1							1								1								1																
1525	46.078687	-88.999739				DEEP																																									
1526	46.078264	-88.999747				DEEP																																									
1527	46.077842	-88.999755				DEEP																																									
1528	46.077419	-88.999762				DEEP																																									
1529	46.076996	-88.99977				DEEP																																									
1530	46.076573	-88.999778				DEEP																																									
1531	46.07615	-88.999785				DEEP																																									
1532	46.075727	-88.999793	15		Rope																																								1			
1533	46.075304	-88.999801				TERRESTRIAL																																									
1534	46.079105	-88.999124	3	Rock	Pole		1														1																								
1535	46.078682	-88.999132				DEEP																																									
1536	46.078259	-88.999139				DEEP																																									
1537	46.077836	-88.999147				DEEP																																									
1538	46.077413	-88.999155				DEEP																																									
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1541	46.076144	-88.999178				DEEP																																									
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1544	46.078254	-88.998532				DEEP																																									
1545	46.077831	-88.998539				DEEP																																									
1546	46.077408	-88.998547				DEEP																																									
1547	46.076985	-88.998554				DEEP																																									
1548	46.076562	-88.998562				DEEP																																									
1549	46.076139	-88.99857	24		Rope																																									
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1552	46.078249	-88.997924				DEEP																																									
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1554	46.077403	-88.997939				DEEP																																									
1555	46.07698	-88.997947				DEEP																																									
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1557	46.076134	-88.997962	6	Rock	Pole		1														1									1															
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1564	46.077397	-88.997331				DEEP																																									
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1566	46.076551	-88.997347	13		Rope		1																1																						
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1568	46.080776	-88.99666				NONNAVIGABLE (PLANTS)																																									
1569	46.080353	-88.99667	2	Sand	Pole																1			1	1																1				
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1577	46.076969	-88.996731				DEEP																																									
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1579	46.08077	-88.996055	1	Sand	Pole		2				2			1							1				1					1															
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1581	46.079924	-88.99607	18		Rope		1																																				1		1			
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1588	46.076964	-88.996124	12	Rock	Pole		2														1									1	1														
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1590	46.080342	-88.995454	12	Muck	Pole		1																									1													
1591	46.079919	-88.995462	18		Rope																																									
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1593	46.079073	-88.995477	29		Rope																																									
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1595	46.078227	-88.995493				DEEP																																									
1596	46.077804	-88.9955				DEEP																																									

Sampling point	Latitude	Longitude	Depth (ft)	Dominant sediment type (M=muck, S=Sand, R=Rock)	Sampled holding rake pole (P) or rake rope (R)?	comments	Total Rake Fullness	EWM	BRASC	CERDE	CHARA	ELEAC	ELEPA	ELOCA	EQUFL	HETDU	ISO_SP	JUNPE	BIDBE	MYRSI	NAJFL	NITELLA	NUPVA	NYMOD	POTAM	POTFO	POTGR	POTNA	POTPR	POTPU	POTRI	POTRO	POTSP	POTST	POTZO	RANFM	SCHAC	SCHTA	SPAAM	UTRVU	VALAM	AQ_MOSS	FW_SPONGE	F_ALGAE	SCHSU	NAJGU	UTRMI	POT_HYB
1597	46.077381	-88.995508				DEEP																																									
1598	46.076958	-88.995516	2	Rock	Pole		1														1																										
1599	46.080759	-88.994839	2	Sand	Pole		2				1										1						1					1														
1600	46.080337	-88.994847	6	Muck	Pole		3							3																		2												1				1
1601	46.079914	-88.994854	15		Rope		1			1				1								1																						1				
1602	46.079491	-88.994862	22		Rope																																										
1603	46.079068	-88.99487	30		Rope																																										
1604	46.078645	-88.994877				DEEP																																									
1605	46.078222	-88.994885				DEEP																																									
1606	46.077799	-88.994893				DEEP																																									
1607	46.077376	-88.9949	22		Rope																																										
1608	46.080331	-88.994239	1	Sand	Pole		1					1					1	1									1									1											
1609	46.079908	-88.994247	3	Rock	Pole		1							1													1			1	1																
1610	46.079485	-88.994254	4	Rock	Pole		3				1										1						3																				
1611	46.079062	-88.994262	9	Rock	Pole		2			1				1								1										1															
1612	46.078639	-88.99427	6	Sand	Pole		1														1																										
1613	46.078216	-88.994277	11	Rock	Pole		2			1	1			1								2																										
1614	46.077794	-88.994285	14		Rope																																										
1615	46.077371	-88.994293	5	Rock	Pole		1				1										1						1																				
1616	46.078634	-88.993662				TEMPORARY OBSTACLE																																										

D

APPENDIX D

WDNR Fisheries Reports

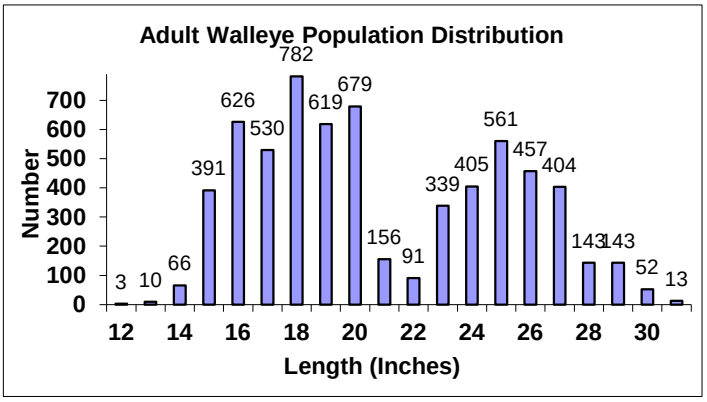
WISCONSIN DNR
FISHERIES INFORMATION SHEET

LAKE: Long **COUNTY:** Vilas **YEAR:** 2012

The Department of Natural Resources surveyed Long Lake, Vilas County, from March 24 through June 4, 2012, to determine the health of its fishery. The survey was primarily focused on estimating the abundance of the lake's game fish populations. Long Lake is a drainage lake with predominately sand, gravel and rock substrate. This lake has a surface area of 872 acres, 8.3 miles of shoreline, and a maximum depth of 95 feet.

Walleye

We conducted a mark-recapture survey of Long Lake to make an estimate of the number of adult* walleye present. We captured and marked (fin clipped) 707 adult walleye in 20 days of netting and captured 234 adult walleyes during one night of electrofishing to complete this estimate.



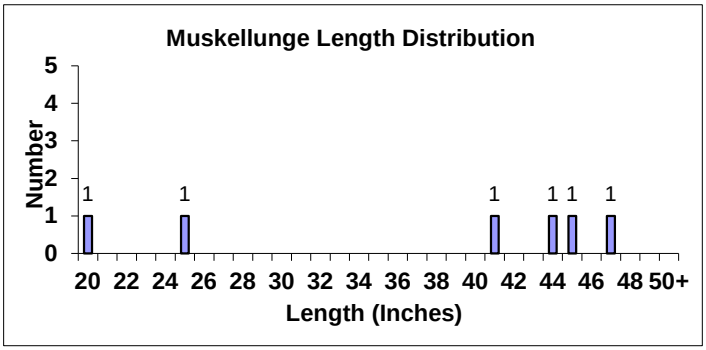
Based on these results, we calculated that Long Lake is home to 6,472 adult walleye (7.4/acre). Approximately 75% of the adult walleye were legal-size, 18 inches long or larger. The average size of the adult walleyes in Long Lake was 19.7 inches long and the largest walleye we captured was a 31.6 inch long female.

* Note: Adult walleye are defined as all sexable walleye regardless of length and any captured of unknown sex ≥ 15 inches long.

Muskellunge

We captured and marked (fin clipped) only 6 adult muskellunge in 30 days of sampling. We did not capture enough muskellunge to estimate the adult muskellunge population present.

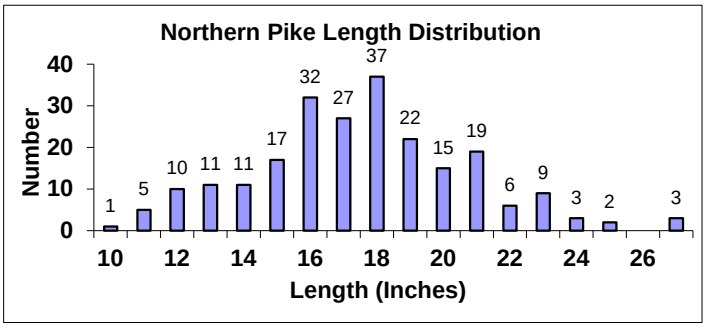
Approximately 66% of the adult muskellunge were 40 inches long or larger and none were longer than 50 inches. The largest muskellunge we captured was a 47.3 inch long female that weighed 29.5 pounds.



Northern Pike

We captured and marked (fin clipped) 230 adult northern pike during all our spring sampling efforts.

Few large pike were captured during the survey. Only 24.5% were longer than 20 inches and none were over 30 inches in length. The largest pike captured was a 27.8 inch female.

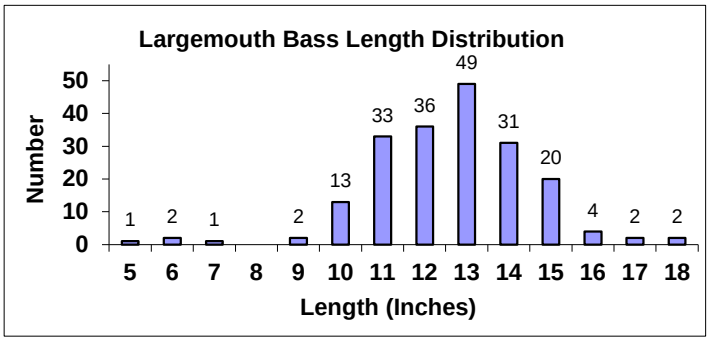


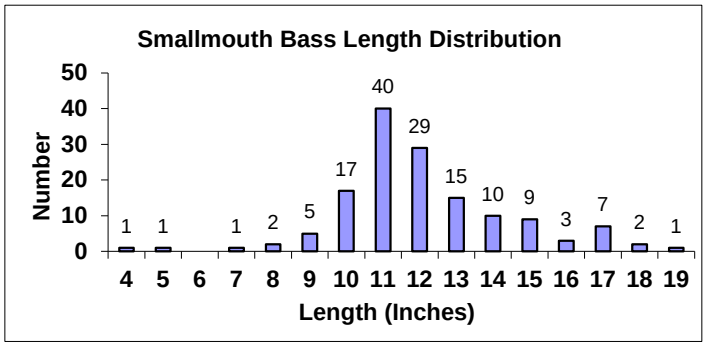
Drafted: June 25, 2012
By: Steve Gilbert

File: Long_ Summary_2011.xls

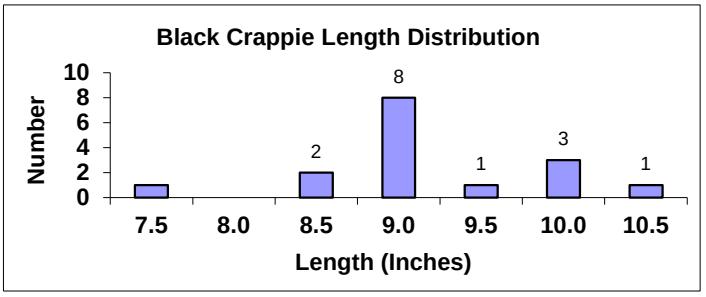
Largemouth and Smallmouth Bass
We did not attempt to make a population estimate of either bass species present. Only 197 largemouth bass were captured during all our sampling of Long Lake. The biggest largemouth bass captured was 18.8 inches long.

Smallmouth bass abundance was also low; only 143 were captured during the entire survey. Smallmouth bass captured ranged in size from 4.2 to 19.2 inches long.

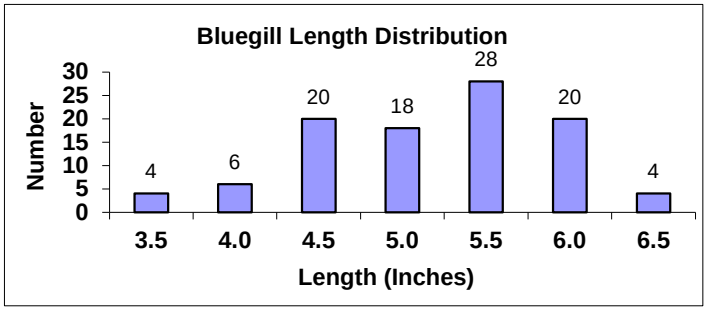




Black Crappie
Black crappie are considered to be low in abundance based on the number captured in our nets. There are a few larger crappie present that did not turn up in our random sample used to produce the graph in this summary. We did capture a 12.2 inch fish in our nets early in the survey.



Bluegill
Bluegill are the most abundant panfish species in Long Lake. Few large bluegills are present in the lake. A random sample of 100 bluegills measured found none larger than 7 inches.



Other Fish Species

All the catch per effort data present here should be viewed as minimum estimates of abundance. Small mesh fyke nets were set during April to monitor rainbow smelt abundance. Smelt were extremely abundant and over 5,000 were captured in a single net over a two day period. On April 26, 8,325 yearling lake trout (7.0 to 8.0 inch) were stocked into Long Lake. For several days after this young lake trout were captured in our nets. Other fish species captured or observed during this survey but in lower numbers were: Pumpkinseed, yellow perch, rock bass, white sucker, and black bullhead.

Table 1. General Fishing Regulations for Long Lake, Vilas County, 2012

FISH SPECIES	OPEN SEASON	DAILY LIMIT	MINIMUM LENGTH
Lake Trout	May 5 - Sept. 30	1	30 inches
Walleye	May 5 - March 3	2*	18 inches
Largemouth and Smallmouth Bass	May 5 - June 15 (C&R) June 16 - March 3 (Harvest)	None 5	 14 inches
Muskellunge	May 26 - Nov. 30	1	50 inches
Northern Pike	May 5 - March 3	5	No minimum length

e normal bag limit is 3 but due to tribal spearing quotas it was lowered to 2 for the 2012 season

A brief summary of selected fishing regulations for Long Lake is included above (Table 1). While the regulatory information provided was current at the time the surveys were conducted, it is not comprehensive and should not be used as a substitute for the current fishing regulation pamphlet. You may obtain a copy of current fishing regulations when you purchase your fishing license, or download a copy from our web site at:

http://www.dnr.state.wi.us/fish/regulations

For answers to questions about fisheries management activities and plans for Long Lake, Vilas County, contact:

Steve Gilbert, Fisheries Biologist
Wisconsin Department of Natural Resources
8770 Highway J
Woodruff, WI 54568
Phone: (715) 356-5211 Ext 229
Email: Stephen.Gilbert@Wisconsin.gov

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: July 21, 2008 FILE REF: 3600

TO: Steve Hewett, GEF 2, F/H 4 , Madison

FROM: Steve Gilbert, Woodruff

SUBJECT: 2009 WDNR Fisheries Rule Development Proposal

Title: Walleye Regulation Change - 18 inch minimum size limit, three Fish bag limit

1. **Author:** Steve Gilbert, Fisheries Biologist – Vilas County

2. **Waterbody:** Long Lake, Vilas County (T41N R12E Sec 7)

3. **Proposal:** Walleye Regulation Change - 18 inch minimum size limit, three fish bag limit

4. Statement of management objectives:

To increase the number of adult walleye (≥ 8.0/ acre), reestablish significant natural walleye recruitment (≥ 20.0 YOY/mile), and provide continued angler harvest opportunity of large walleye in Long Lake, Vilas County. Also, provide biological control of an abundant rainbow smelt population.

5. Description of Fishery Status:

Long Lake is 872 acres, oligotrophic, and has a maximum depth of 95 feet. It is a drainage lake providing the headwaters of the Deerskin River. The lake is located 3 miles east of the town of Phelps and 98% of its 7.9 miles of shoreline are privately owned (Black et al. 1963). There is a town landing located on the north shore that provides public access. The Wisconsin Valley Improvement Company owns a small dam at the outlet that has minimal effects on water levels.

The lake had a history as a very good naturally reproducing walleye fishery. Smallmouth bass, largemouth bass, muskellunge, and northern pike are the other gamefish species present. The panfish fishery consists of low numbers of yellow perch, bluegills, and black crappie. The lake also supports a cold water fishery. The Wisconsin DNR has recently stocked lake trout into the lake and there are also cisco present. Rainbow smelt were illegally introduced into the lake in the early 1990's and their numbers have exploded in the lake threatening the entire fish community.

Walleye Fishery

Prior to the introduction of smelt, the walleye population averaged between 2 and three adults per acre and was known for trophy fish (figure 1). Walleye numbers at this time were supported by excellent natural recruitment. Recent failures in natural recruitment have resulted in a decline in fish under fifteen inches in length. The 2004 survey shows a change in this trend, but all these fish are a result of the only successful stocking event in 2001.

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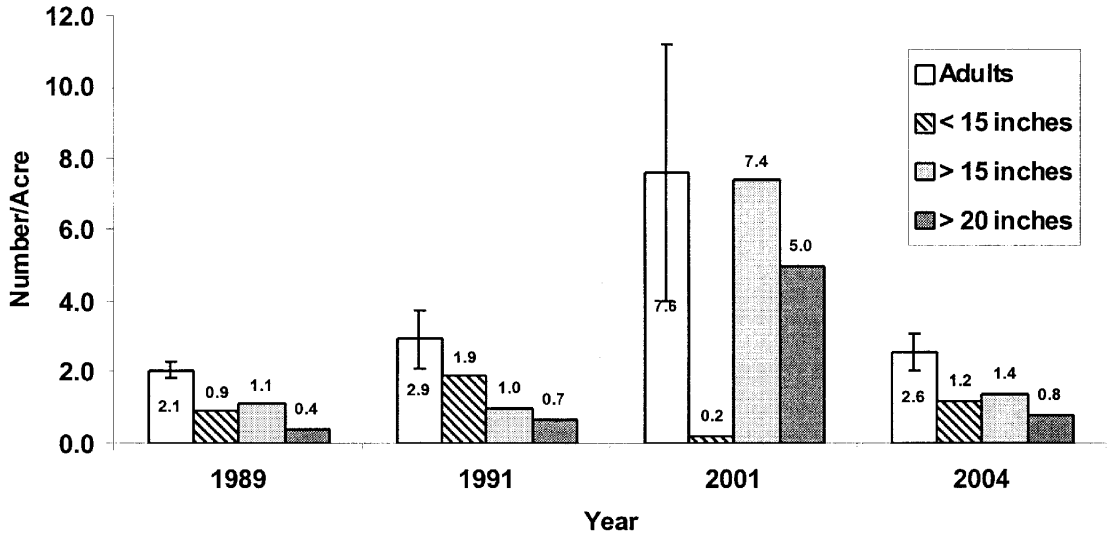
Figure 1. Adult Walleye Population Estimate History for Long Lake, Vilas County. Error bars represent the 95% confidence intervals.



Walleye Recruitment

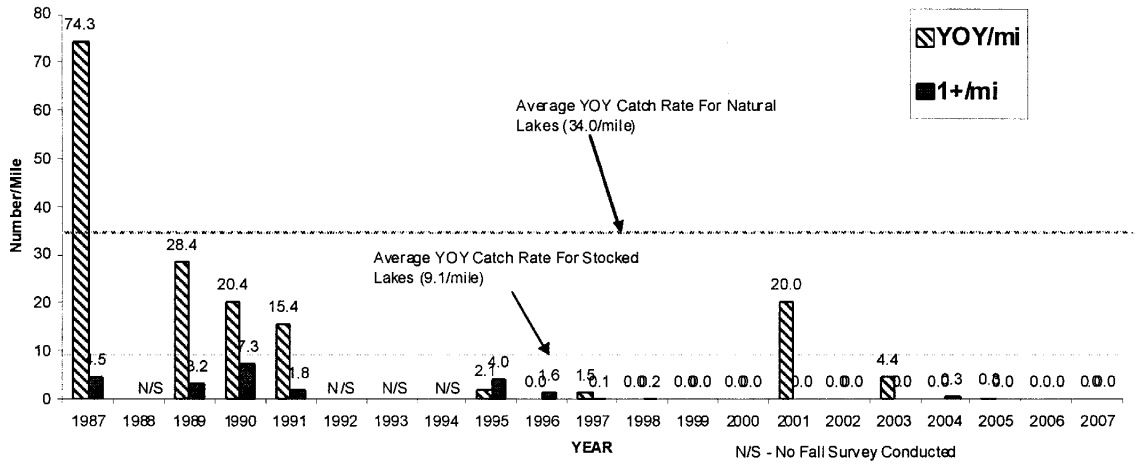
Fall electrofishing surveys found an average of 34.6 young of year (YOY) per mile prior to 1992 (figure 2). From 1993 to the present 10 fall surveys conducted in non-stocked years have averaged only 0.4 YOY/mile. This time frame coincides with the introduction and establishment of an abundant rainbow smelt population in the lake.

Three attempts (2001, 03, and 05) by the department to stock the lake with 50 spring walleye fingerlings per acre (< 2.0 inches) had limited results. Fall electrofishing surveys in these three years were 20.0, 4.4, and 0.3 YOY/mile respectivily. Stocked fish were oxytetracycline marked and results from our fall sampling found that all YOY captured in these stocked years were stocked fish. The reason for the failure of stocking is directly related to the abundant smelt population. Smelt can potentially prey on young walleye and compete for the same food. This trend in walleye populations has been documented in other Vilas County waters where smelt have been introduced (Mercado-Silva et al. 2007).

In 2007, the department stocked 7,229 large walleye fingerlings (≥ 6 inches) in Long Lake in hopes that these fish would be too large for smelt to prey on and could feed on juvenile smelt. This strategy has worked well on Sparkling Lake, Vilas County and resulted in overwinter survival of large stocked fingerlings averaging 48.6% over a four year period (Gilbert 2007).

The department is working with the Long Lake of Phelps Lake District to stock about 7,000 large walleye fingerlings on an annual basis for the next ten years. The goal is to increase adult walleye numbers to a point where we again see natural recruitment. The department will stock large fingerlings in odd numbered years and the lake district in even years during this time period.

Figure 2. Fall Walleye Recruiment History for Long Lake, Vilas County 1987 to 2007
CPUE is from one circuit of the entire shoreline using electrofishing gear.



Walleye Harvest

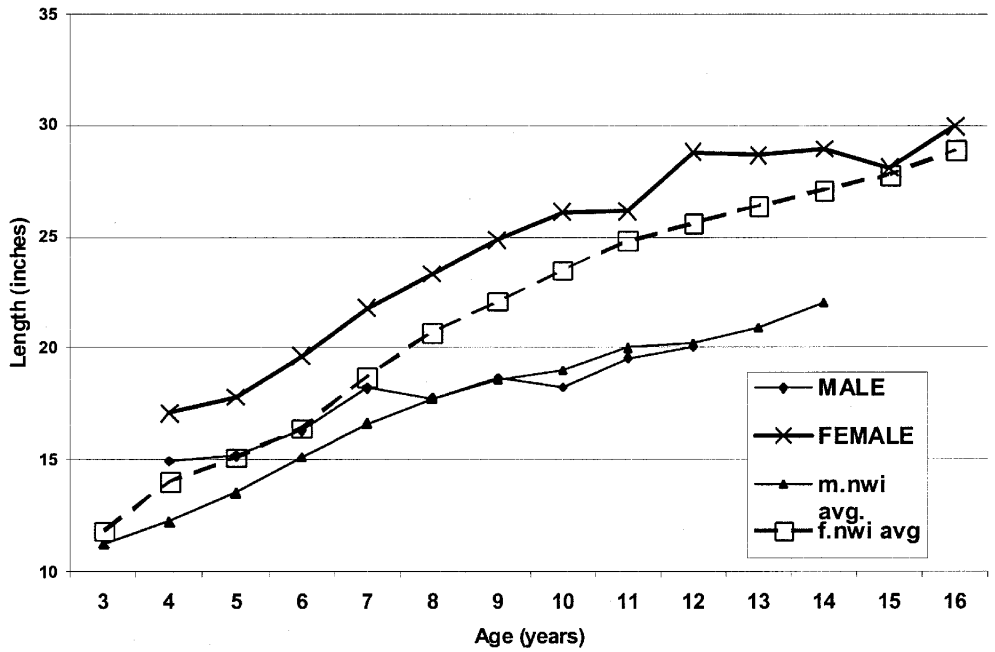
The last creel survey of Long Lake was conducted in 1991. At this time the walleye regulation on the lake was a 15 inch minimum length and 5 fish bag limit. Based on the results of the survey, anglers caught 2,724 and harvested 237 walleye for the entire season. Catch and harvest rates of anglers specifically seeking walleye were 3.1 and 37.0 hours per fish respectively. This survey occurred at a time of good natural recruitment and results should be viewed as minimum goals for the success of this regulation and stocking effort. Also, based on modeling of Wisconsin walleye populations, an 18 inch minimum size limit will result in slightly higher harvest rates over time (Hewett 1998).

Long Lake is in the ceded territory and tribal harvest of walleye does occur. Current tribal harvest is between 60 and 90 walleye each year on Long Lake. The WDNR and the lake district are attempting to work with tribal leaders and biologists to set a harvest level that would aid in the rehabilitation of this important walleye fishery.

Walleye Growth

Walleye scale and spine samples taken in 2001 from Long Lake walleye indicate above average growth compared to other lakes in our region (figure 3). Female walleye do not start to mature in Long Lake until they reach age 4 and average of 17.1 inches I length. An 18 minimum size limit would allow almost all female fish to spawn twice before reaching legal length. This good growth is probably due to the rainbow smelt population and the lack of competition for this food resource.

Figure 3. Spring 2001 Adult Walleye Length at Age, Long Lake, Vilas County



6. Justification of Selected Regulation:

The current 15 inch minimum size limit and 5 fish bag limit (2 fish in most years due to tribal declarations) is not adequate to protect the female walleye population from anglers. Changing the walleye regulation to an 18 inch minimum and three fish bag limit should increase walleye numbers and maintain quality.

This regulation change should improve walleyes numbers and increase predation on rainbow smelt. Recent research on rainbow smelt indicates that a combination of an 18 inch size limit and stocking can substantially decrease smelt numbers in a lake (Krueger 2005).

Future plans call for monitoring walleye recruitment and the survival of stocked fingerling on a regular basis. A walleye population estimate and creel survey should be conducted on the lake in 7 to 10 years after implementation of the regulation to evaluate any changes.

References

Black, John J., Andrews, L. M. and C. W. Threinen. 1963. Surface water resources of Vilas County. Wisconsin Conservation Department, Madison, Wisconsin. 316 pages.

Gilbert, Stephen J., 2007. Evaluation of stocking of large fingerling walleye, Sparkling Lake, Vilas County Wisconsin 2006 progress report. 21 pages.

Hewett, Steven. and Timothy Simonson. 1998. Wisconsin's Walleye Management Plan: Moving Management into the 21st Century. Administrative Report #43. Wisconsin Department of Natural Resources. 81 pages.

Krueger, Damon M., and Thomas R. Hrabik. 2005. Food web alterations that promote native species: the recovery of cisco (coregonus artedi) populations through management of native piscivores. Can. J. Fish. Aquat. Sci. 62: 2177-2188.

Mercado-Silva, Norman, Greg Sass, Brian M. Roth, Stephen J. Gilbert, and M. Jake Vander Zanden. 2007. Impact of rainbow smelt (Osmerus mordax) invasion on walleye (Sander Vitreus) recruitment in Wisconsin Lakes. Can. Jour. Aquat. Sci. 64: 1443 – 1550.

7. Public Comment:

The Long Lake of Phelps Lake District has reviewed this proposal and strongly approve of this regulation change.

This regulation change should cause no conflicts with tribal harvest. Tribal members will continue to harvest walleye from this lake as they have in the past. Increasing the walleye population of Long Lake will have no negative impacts on annual tribal walleye harvest.

8. Previous Action:

Past walleye fishing regulations on Long Lake have followed the general inland rules for the state. The current walleye regulation on the lake is the 15 inch minimum size limit and 5 fish bag limit.

This is the first time that an 18 inch minimum length and one fish bag limit has been proposed for this lake. Currently only one other lake in Vilas County has this same regulation. This does no include the many waters of the Lac du Flambeau reservation that all have the 18 inch minimum and the 3 fish bag limit by special memorandum of agreement with the Secretary of the Wisconsin Department of Natural Resources.

If no action is taken the Long Lake walleye fishery will remain low density and no natural recruitment will occur. Rainbow smelt numbers will remain high and the native fishery of the lake will decline. Walleye stocking would be discontinued and management emphasis would be directed at species more compatible with rainbow smelt infestations.

9. Draft Question:

Long Lake Walleye Regulation – Increase the minimum length limit from 15 inches to 18 inches and reduce the daily bag limit from 5 five in total to 3 fish in total.

The current 15 inch minimum size limit and 5 fish bag limit is not adequate to protect walleye stocked as part of a joint 10 year effort of the WDNR and the lake district. It is recommended that the walleye regulation on this lake be changed to an 18 inch minimum and 3 fish bag limit. This regulation should improve walleye catch rates, increase numbers of adults present providing additional angler opportunity, protect female walleye for an additional two to three spawning

seasons, and hopefully reestablish natural walleye recruitment. Increasing numbers of walleye may also help control abundant numbers of rainbow smelt that are responsible for the decline in this important walleye fishery.

Do you favor increasing the minimum length limit from 15 inches to 18 inches and reducing the daily bag limit from 5 five to 3 in total for walleye on Long Lake in Vilas County?

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: July 21, 2008 FILE REF: 3600

TO: Steve Hewett, GEF 2, F/H 4 , Madison

FROM: Steve Gilbert, Woodruff

SUBJECT: 2009 WDNR Fisheries Rule Development Proposal

Title: Muskellunge Regulation Change - 50 inch minimum size limit

1. Author: Steve Gilbert, Fisheries Biologist – Vilas County

2. Waterbody: Long Lake, Vilas County (T41N R12E Sec 7)

3. Proposal: Muskellunge Regulation Change - 50 inch minimum size limit

4. Statement of management objectives:

There is a lack of trophy fishing regulations for muskellunge in the Northern Region. Vilas County has over 200 lakes that contain muskellunge (WDNR 1995), more than any other county in Wisconsin. Only 12 (10 at 40 inch and 2 at 45 inch minimum) of these have special regulations for muskellunge. Preliminary evaluations of our 40-inch minimum waters indicate this regulation has not significantly increased the numbers of fish greater than 40 inches in length when compared to a 34 inch minimum size limit (Margeneau 2000). Long lake has the potential to produce true trophy ($\geq$ 50 inches) muskellunge if afforded more conservative protection than a 40 inch minimum size limit.

5. Description of Fishery Status:

Long Lake is 872 acres, oligotrophic, and has a maximum depth of 95 feet. It is a drainage lake providing the headwaters of the Deerskin River. The lake is located 3 miles east of the town of Phelps and 98% of its 7.9 miles of shoreline are privately owned (Black et al. 1963). There is a town landing located on the north shore that provides public access. The Wisconsin Valley Improvement Company owns a small dam at the outlet that has minimal effects on water levels.

The lake has a history as a low density muskellunge fishery with trophy potential. Smallmouth bass, largemouth bass, walleye, and northern pike are the other gamefish species present. The panfish fishery consists of low numbers of yellow perch, bluegills, and black crappie. The lake also supports a cold water fishery. The Wisconsin DNR has recently stocked lake trout into the lake and there are also cisco present. Rainbow smelt were illegally introduced into the lake in the early 1990's and their numbers have exploded in the lake threatening the entire fish community.

Muskellunge Fishery

In 2001 a comprehensive fishery survey was conducted of Long Lake. As part of this survey information on the muskellunge fishery was collected. Fifty muskellunge were captured using

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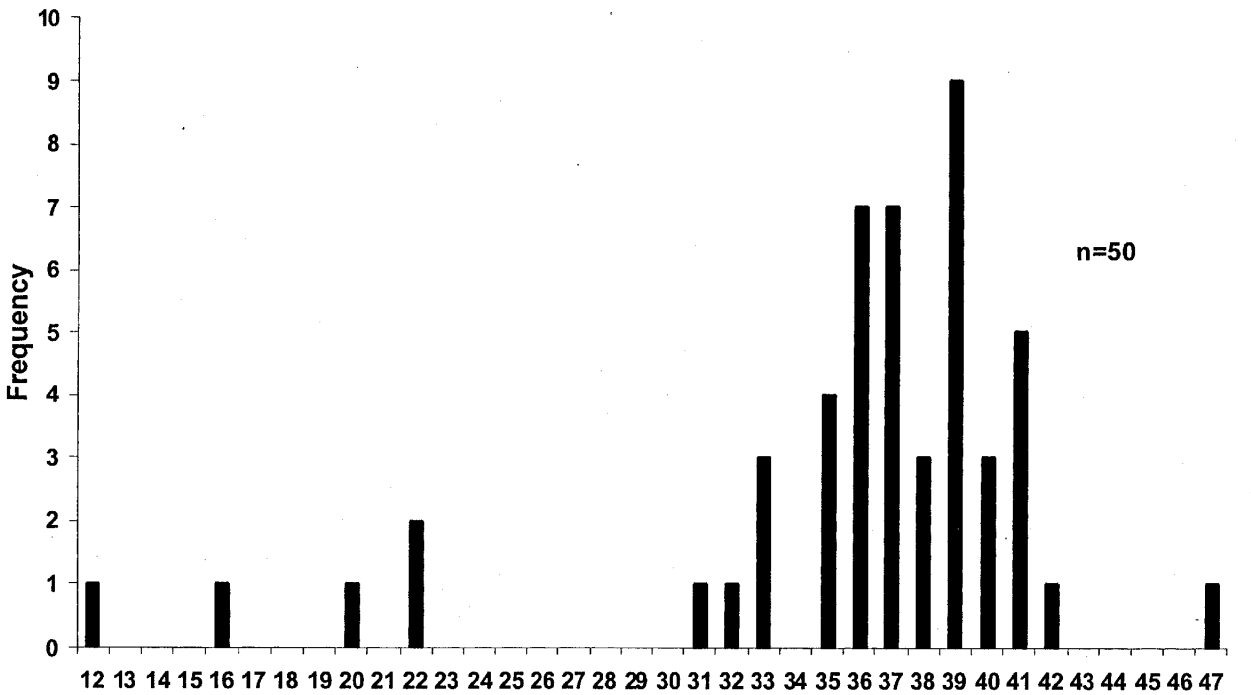
fyke nets and electrofishing gear. The largest fish captured was a 47.0 inch long female. We did not attempt to make a mark recapture population estimate as part of this survey. RSD 34 and 40 values calculated using a stock length of 30 inches, were 89 and 22 respectively. These RSD values are above those reported for other northern Wisconsin muskellunge waters (Margenau 2000, Hanson 1986). RSD 45 values were not calculated for these other lakes, but Long Lake had a value of only 2. RSD values based on length frequency data are a good indicator of actual population structure (Hanson 1986). If this is the case then there are very few muskellunge greater than 45 inches in length in this population.

Figure 1. 2001 Muskellunge Length Distribution for Long Lake, Vilas County.



Muskellunge Recruitment

Currently the muskellunge population of Long Lake is maintained through natural recruitment. The lake has been stocked only once (1996) with fingerling muskellunge since 1958. Spring netting and fall electrofishing surveys indicate that there is natural recruitment in most years.

Muskellunge Harvest

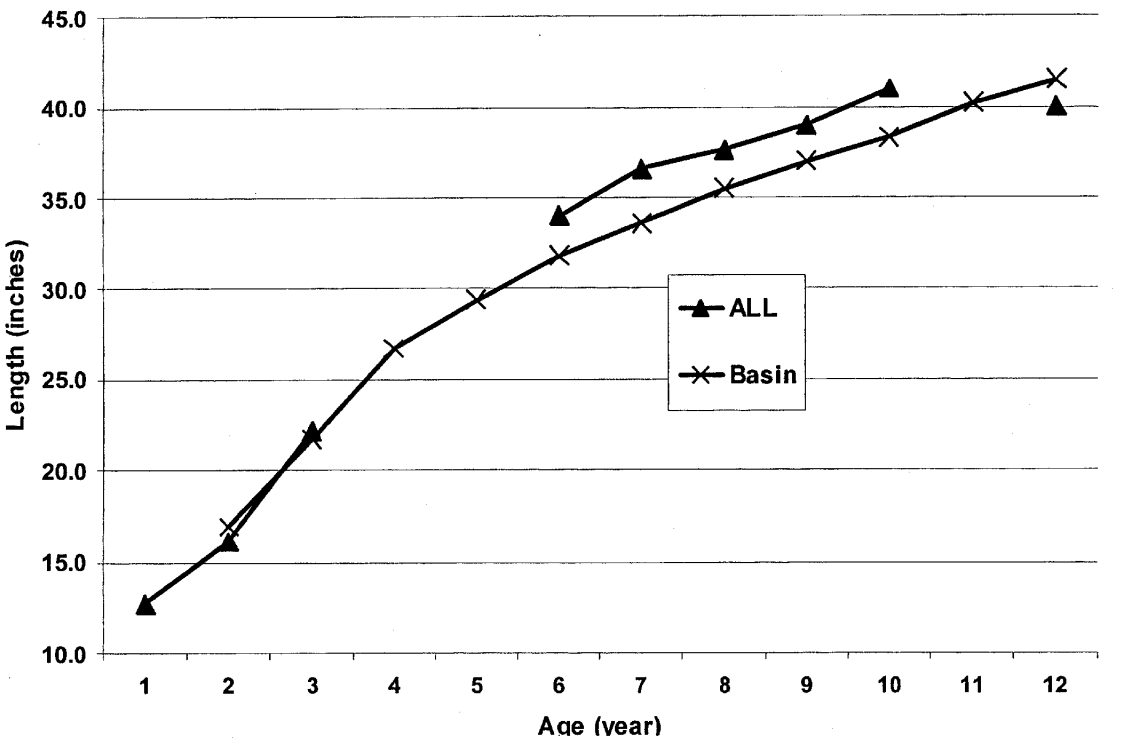
The last creel survey of Long Lake was conducted in 1991. At this time the muskellunge regulation on the lake was a 32 inch minimum length and 1 fish bag limit. Based on the results of the survey, anglers caught an estimated 69 and harvested 25 muskellunge for the entire season. This harvest is based on three fish reported to the creel clerk as harvested. Two of these fish were measured and they were 38.0 and 38.5 inches in length. Catch and harvest rates of anglers specifically seeking muskellunge were 57.8 and 121.9 hours per fish respectively.

Long Lake is in the ceded territory and tribal harvest of muskellunge does occur. Only two muskellunge have been harvested by tribal members from Long Lake since 1985.

Muskellunge Growth

Muskellunge scale and spine samples taken in 2001 from Long Lake indicate above average growth compared to other lakes in our region (figure 2). This good growth is probably due to the abundant forage base that includes rainbow smelt, cisco, and white sucker .

Figure 2. Muskellunge Length at Age (all sexes combined) for Long Lake, Vilas County. Basin averages are from sexes combined data from lakes located in the headwaters basin of northern Wisconsin.



6. Justification of Selected Regulation:

The current 34 inch minimum size limit is not adequate to produce significant numbers of muskellunge 50 inches or greater in length. Long Lake has the size, growth rate, and forage base to produce greater numbers of trophy muskellunge. There is also a significant segment of the angling public that would like to see greater opportunities to catch larger muskellunge. In 1999 a survey was conducted by the Wisconsin department of natural resources of 1,400 anglers who fish muskellunge in Wisconsin (Margenau 2004). The survey found that 62% of anglers felt that a trophy muskellunge was a fish 50 inches or longer in length. Changing the muskellunge regulation to a 50 inch minimum should increase numbers of trophy sized fish in Long Lake and provide an additional angling opportunity in Vilas County.

Future plans call for monitoring muskellunge recruitment each fall. A Muskellunge population estimate and creel survey should be conducted on the lake in 10 to 15 years after implementation of the regulation to evaluate any changes.

References

Black, John J., Andrews, L. M. and C. W. Threinen. 1963. Surface water resources of Vilas County. Wisconsin Conservation Department, Madison, Wisconsin. 316 pages.

Hanson, David A. 1986. Population characteristics and angler use of muskellunge in eight northern Wisconsin lakes. Am. Fish. Soc. Spec. Publ. 15:238-248.

Margenau, Terry L. and Steven P. AveLallemant. 2000. Effects of a 40-inch minimum length limit on muskellunge in Wisconsin. N. Amer. J. Fish Mgt. 20:986-993.

Margenau, Terry L. and Jordan B. Petchenik. 2004. Social aspects of muskellunge management in Wisconsin. N. Amer. J. Fish Mgt. 24:82-93.

Wisconsin Muskellunge Waters. 1995. Wisconsin department of natural resources. Publication RS-919-96.

7. Public Comment:

At the 2008 spring Vilas County conservation congress hearing this regulation was submitted as a resolution. It passed by a 54 to 24 vote and was submitted to the conservation congress warm water committee and passed their review as well. The Long Lake of Phelps Lake District has reviewed this proposal and approves of this regulation change.

This regulation change should cause no conflicts with tribal harvest. Tribal members have speared only two muskellunge from Long Lake since 1985. Increasing the muskellunge population of Long Lake will have no negative impacts on annual tribal muskellunge harvest.

8. Previous Action:

Past muskellunge fishing regulations on Long Lake have followed the general inland rules for the state. The current muskellunge regulation on the lake is a 34 inch minimum size limit and 1 fish bag limit.

In 2003, a 50 inch minimum regulation was proposed for Long Lake along with 17 other lakes across Vilas and Oneida Counties. At that time it was voted down statewide (1,246 to 2,278) and at the county level (29 to 149). Currently no lakes in Vilas County have a 50 inch minimum length regulation.

If no action is taken the Long Lake muskellunge fishery will remain low density and few large musky will be harvested.

9. Draft Question:

Long Lake Muskellunge Regulation – Increase the minimum length limit from 34 inches to 50 inches.

The current 34 inch minimum size limit is not adequate to produce a trophy muskellunge fishery. It is recommended that the muskellunge regulation on this lake be changed to a 50 inch minimum length limit. This regulation should improve muskellunge catch rates, increase numbers of adults, and provide an opportunity to catch fish 50 inches and longer.

Do you favor increasing the minimum length limit from 34 inches to 50 inches for muskellunge on Long Lake in Vilas County?

Revised 8/8/2008 SJG

Long Lake of Phelps Lake District

October 20, 2012

Commissioner's Meeting

Agenda Item: Fish Stocking Update

- From 2007 through 2012 approximately 31,939 large walleye fingerling have stocked in Long Lake by the DNR (22,949) and the LLPLD (9000) at a total cost of $63,878.00. LLPLD has stocked 3000 each in 2008 , 2010 and 2012.
- Survival rate has been good, but natural recruitment is still minimal due to the smelt.
- See attached document for the results of the 2012 WDNR comprehensive fisheries study.
- In 2012 the WDNR stocked 6100 large lake trout fingerlings and plan to stock another 6100 fingerlings in 2013 to help address the smelt issues.
- In 2013 the WDNR are planning to stock approximately 300 Muskellunge.