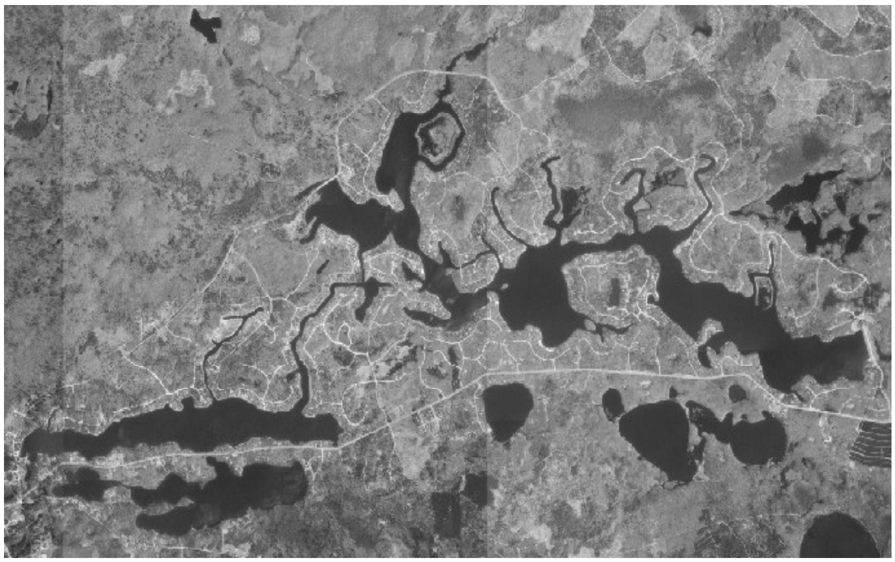
Legend Lake Eurasian Watermilfoil Adaptive Management Program

2008 Progress Report and
Update to the Aquatic Plant Management Plan



Prepared for

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Introduction

The water body known as Legend Lake is a chain of interconnected water bodies including Wahtohsah, Skice, Main Channel, Spring, Peshtigo, Little Blacksmith, Big Blacksmith, Sapokesick and Pywaosit Lakes. These nine natural lake basins were dredged and dammed in the 1960s to create a connected waterway that encompasses a total of 1230 acres. The Legend Lake system is located in Menominee County, Wisconsin, and is entirely within the boundaries of the Menominee Indian Reservation. A total of 2500 properties are located on or near the system.

Eurasian watermilfoil is an invasive exotic plant that is native to Europe, Asia and Northern Africa. Of the eight milfoil (*Myriophyllum*) species found in Wisconsin, Eurasian watermilfoil is the only exotic. It may have first appeared in Legend Lake in 2002. In Legend Lake its expansion has been rapid. Its distribution was estimated at 50 acres in 2003, 150 acres in 2004, and between 250 - 400 acres by the spring of 2005. The first effort to physically map the distribution of the plant and measure its acreage, conducted in the fall of 2005, found 538 acres of Eurasian watermilfoil in Legend Lake.

Recent Management Activities

A three-year aquatic plant management plan entitled *Legend Lake Aquatic Plant Management Plan 2006-2008* was adopted by the Legend Lake Protection and Rehabilitation District (LLPRD) during February 2006. The LLPRD developed this management plan with extensive consultation from the Menominee Indian Tribe of Wisconsin (MITW), the Wisconsin Department of Natural Resources (WDNR), Northern Environmental Technologies Inc., Vierbicher Associates Inc., and Wisconsin Lake & Pond Resource, LLC. The *Legend Lake Aquatic Plant Management Plan 2006-2008*, outlined a multi-year Eurasian watermilfoil treatment and lake monitoring program for the Legend Lake System. The primary goal of this management plan was to reduce and maintain Eurasian watermilfoil at less than 10% of its pre-treatment frequency.

Treatments of Eurasian watermilfoil took place in select lake basins in 2006 and 2007. These treatments did not target the full distribution of milfoil due to concerns over oxygen depletion, impacts to native plants, and impacts to water quality. **Table 1** presents the changes in Eurasian watermilfoil distribution by lake basin from 2005 to 2008.

During May 2008, a total of 497.7 acres of Eurasian watermilfoil were treated with Navigate® at rates between 100-150 lbs/acre (**Figure 1**). This included small-scale treatments of regrowth (defined in this report as less than 20% of a lake basin) in Main Channel, Spring, Peshtigo, Little Blacksmith, and Big Blacksmith Lakes at a rate of 150 lbs/acre, as well as first time large-scale treatments (greater than 20%) in Wahtohsah, Skice, Sapokesick, and Pywaosit Lakes at 100 lbs/acre. The small-scale follow-up treatments in July 2008 targeted actively growing milfoil in Main Channel, Spring, Peshtigo, Little Blacksmith, Big Blacksmith, Sapokesick and Pywaosit Lakes. In total, 36.1 acres were treated with Navigate® at a rate of 150 lbs/acre (**Figure 2**).

Table 1. Changes in Eurasian watermilfoil distribution (acres) from 2005 to 2008.

	Year			
Location	**2005**	**2006**	**2007**	**2008**
Wahtosah/Skice	114.2	180.3	249.7	32.2
Main Channel	10.5	6.9	0.7	3.4
Spring	38.0	87.8	6.8	14.6
Peshtigo	32.1	21.0	16.1	9.6
Little Blacksmith	60.4	34.1	6.1	9.9
Big Blacksmith	88.2	43.6	16.0	13.4
Sapokesik/Pywaosit	194.6	286.5	202.3	73.3
totals	538.0	660.2	497.7	156.4

With some modifications, the same extensive lake monitoring protocol that was used in 2006 and 2007 was used in 2008. This report presents the results of treatments and monitoring efforts, and makes recommendations for management of Eurasian watermilfoil in 2009.

Methods

Pre-treatment monitoring of Eurasian watermilfoil began in April 2008, shortly after ice-out. Each treatment area was monitored weekly to determine plant growth stage. This was done in order to optimize treatment efficacy.

Dissolved oxygen and temperature profiles were collected at 14 locations throughout the Legend Lake System one week prior to treatment and each week for six weeks after treatment. These sites included the deep basins of each lake as well as shallower treatment areas (**Figure 3**). Additionally, profiles were taken once each month in August and September. Data were collected with an electronic meter at two foot intervals from lake surface to bottom (or to a maximum depth of 50 feet) from an anchored boat. This extensive monitoring was done in order to allow time for implementing contingency plans if localized oxygen depletion was detected.

Assessment of lake water quality was done in each of the nine lake basins and below the dam at the outlet to Moshawquit Lake. Sampling was done prior to treatment in May, and again in June, July, August and September. Samples analyzed on each date included:

- Chlorophyll a
- Secchi disc depth
- Total phosphorus
- Stream flow

Figure 1. Locations of Eurasian watermilfoil (*Myriophyllum spicatum*) treated in May 2008 in Legend Lake, Menominee County, Wisconsin (497.7 acres total).

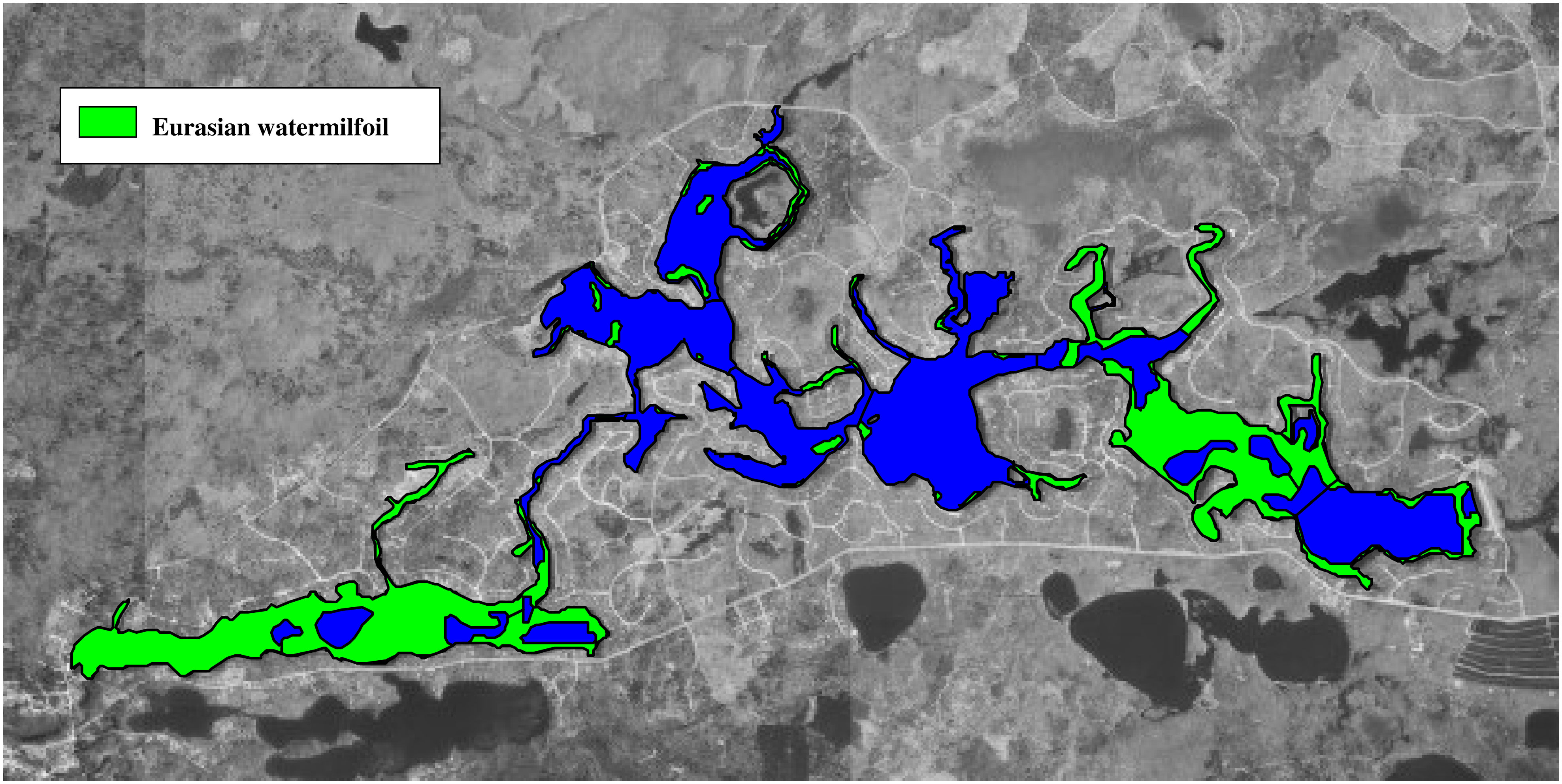
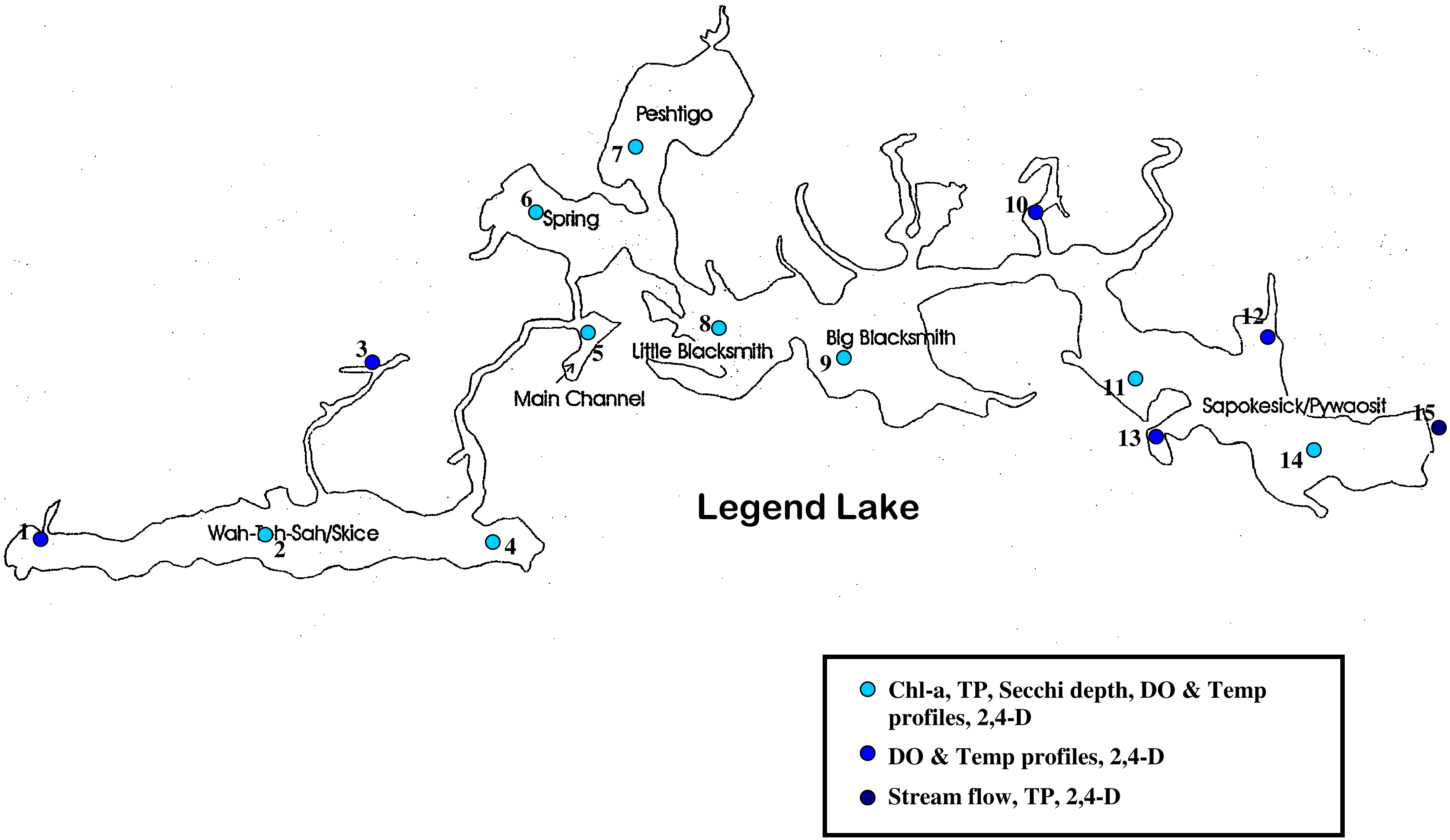


Figure 2. Locations of Eurasian watermilfoil (*Myriophyllum spicatum*) treated in July 2008 in Legend Lake, Menominee County, Wisconsin (36.1 acres total).

Figure 3. 2008 Water Quality, Dissolved Oxygen, and 2,4-D Monitoring Sites



Samples were collected from one foot below the surface over the deepest point of each lake basin. Stream flow data and total phosphorus samples were collected below the dam at the outlet to Moshawquit Lake. All chlorophyll and total phosphorus samples were preserved and sent to the State Lab of Hygiene for analysis.

These parameters were tested to assess any water quality impacts resulting from treatment, and to determine if inherent differences in lake water chemistry affected treatment success.

Assays of 2,4-D concentration were conducted from samples collected in each lake basin to determine relationships between treatment efficacy, selectivity and 2,4-D concentration. Samples were collected from several locations in each treated lake basin. Additional control samples were collected outside of treatment areas to assess the extent of any in-lake herbicide drift. Another control sample was collected at Moshawquit Creek, the outlet of Legend Lake, to assess the extent of any downstream herbicide drift. Samples were collected at each of 15 locations (**Figure 3**) prior to treatments and weekly up to 42 days after treatment (DAT). All samples were sent to a State certified laboratory for analysis.

A point-intercept survey of aquatic plants was conducted on Legend Lake by the Wisconsin Lake & Pond Resource staff during August 2008 using the same methodology that was used in the 2006 and 2007 surveys. This methodology involved developing a point intercept map based on a 60 meter grid for each lake basin. An on-board GPS system was used to navigate to each of these sample points. At each sample point, a rake was thrown from the boat and dragged along the bottom for approximately 2.5 feet to collect plants. An abundance rating of 1 to 3 was given for each species collected. In addition to the plant data, depth and bottom substrate composition were recorded for each point intercept.

These survey results were used to assess pre- and post-treatment differences in the aquatic plant community, native plant responses to treatment, and effectiveness of Eurasian watermilfoil control efforts.

Mapping of Eurasian watermilfoil beds was done in October 2008 to determine 2009 treatment needs. A late season survey date was used to provide more accurate estimates of spring distribution. This survey relied on the point-intercept aquatic plant survey data collected by Wisconsin Lake & Pond Resource staff in August 2008 to locate the general area of the beds. A more detailed distribution map of Eurasian watermilfoil beds was then developed using sonar readings, rake tows and visual observations. The area of Eurasian watermilfoil beds was then verified with acreage grid analysis.

Results and Discussion

Treatment Effectiveness

Visual observations of treatment areas conducted in June and July 2008 suggested that a high degree of Eurasian watermilfoil control had been achieved following the May treatment; which utilized Navigate® applied at rates of 100-150 lbs/acre. By the time of the August aquatic plant survey however, regrowth was found throughout the system. Some areas had significant regrowth, but a majority of the regrowth was identified in small isolated locations. In addition, most of the Eurasian watermilfoil found was new growth that was well below the surface. These plants may have re-grown from roots of plants that survived treatment or they may have sprouted from seed. Based on the August 2007 plant survey and mapping results, an overall average for the entire system was a 69% reduction in Eurasian watermilfoil distribution over the past year and a 76% reduction since 2006 (**Table 2**).

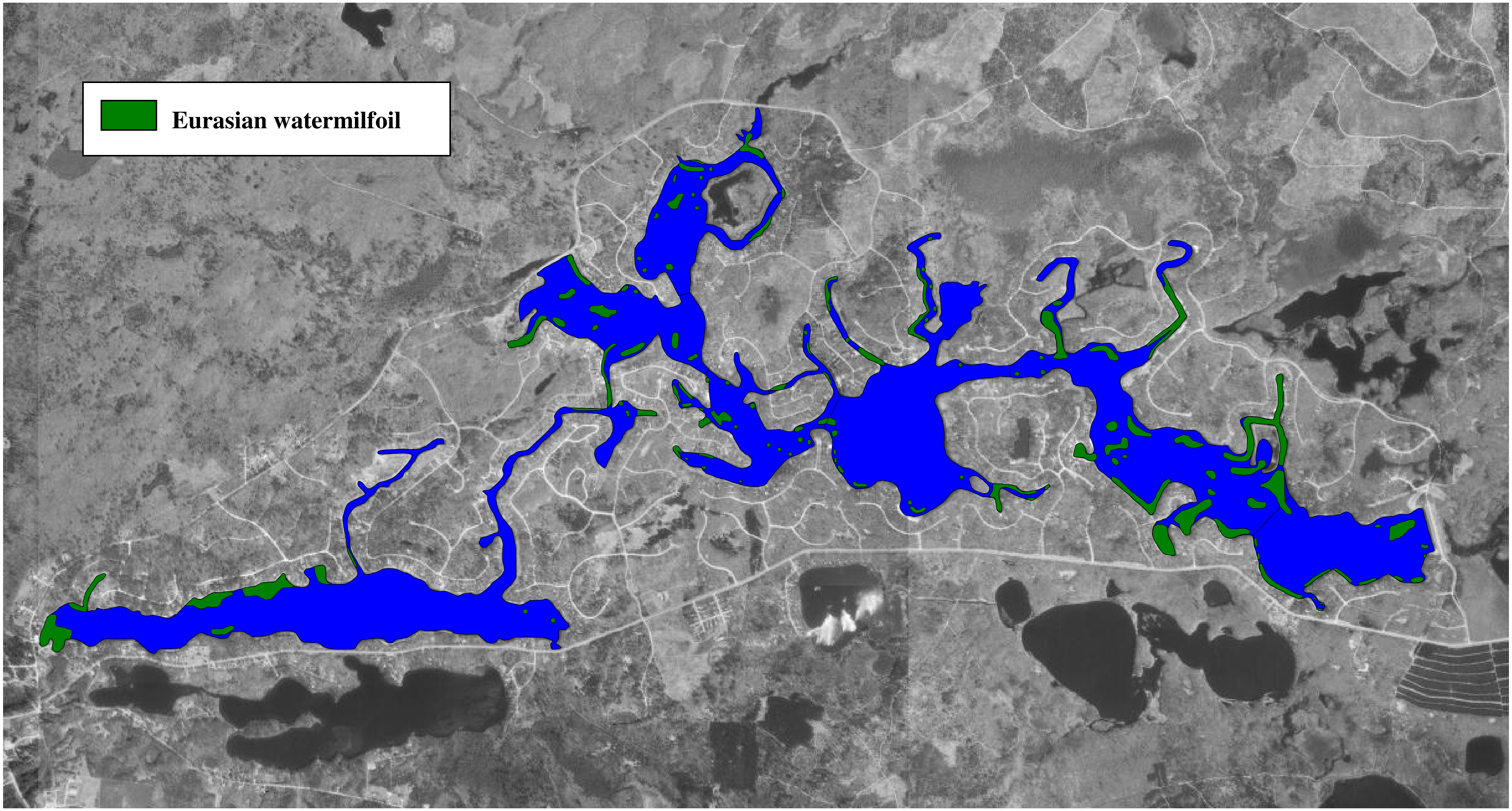
Milfoil Distribution

Figure 4 shows the distribution of Eurasian watermilfoil in the Legend Lake system determined during the October 2008 mapping effort. In total 156.4 acres of Eurasian watermilfoil remain in Legend Lake (**Table 2**).

Table 2. 2008 pre- and post-treatment Eurasian watermilfoil (*Myriophyllum spicatum*) acreage for Legend Lake, Menominee County, Wisconsin.

Lake Basin	Pre-treatment Acreage	Post-treatment Acreage	Percent Change
Wahtohsah/Skice	249.7	32.2	-87.1
Main Channel	0.7	3.4	385.7
Spring	6.8	14.6	114.7
Peshtigo	16.1	9.6	-40.4
Little Blacksmith	6.1	9.9	62.3
Big Blacksmith	16	13.4	-16.3
Sapokesick	174.7	65.9	-62.3
Pywaosit	27.6	7.4	-73.2
Total	*497.7*	*156.4*	*-68.6*

Figure 4. October 2008 distribution of Eurasian watermilfoil (*Myriophyllum spicatum*) in the Legend Lake system, Menominee County, Wisconsin (156.4 acres total).



Wisconsin Lake & Pond Resource LLC

Dissolved Oxygen

Lakes may experience periodic anoxic conditions due to the natural die-off and decomposition of algae and macrophytes. Anoxic conditions may also occur due to the die off and decomposition of algae and macrophytes treated with algaecides and herbicides – thus the concern with oxygen depletion following large scale treatments in Legend Lake.

Dissolved oxygen and temperature data are taken together, as dissolved oxygen saturation concentrations are inversely related to temperature. This inverse relationship is apparent in both the early- and late-season readings when water temperatures were at their coolest and dissolved oxygen readings were at their highest. Conversely, when water temperatures were at their highest in July and August, dissolved oxygen concentrations were at their lowest.

The early-season treatment strategy employed on the Legend Lake System takes advantage of these factors. Treating early in the season when plants first begin growing targets plants when their biomass is lowest, thus there is far less plant matter to decompose. Treating early in the season also takes advantage of the highest dissolved oxygen concentrations of the year. This treatment strategy appears to have been very effective in preventing significant oxygen depletion since treatments began in 2006.

Appendix A contains all dissolved oxygen and temperature data collected in the Legend Lake system in 2008. Within these data tables, the thermocline (depth of thermal stratification) and any oxygen depletion below 5 ppm in the epilimnion (area above stratification) have been indicated. In most cases, *when* oxygen depletion was identified within the epilimnion of a deeper lake basin, it was found at depths greater than 14 feet. In shallower locations, when this depletion occurred, the depths at which it was identified varied. It appears from the data that in some cases the dissolved oxygen electrode was resting on the sediment. Between May 30 and June 5, 2008, some sites in Sapokesick Lake showed more significant declines in oxygen. However, in both the deep and shallow locations, the oxygen depletion did not occur throughout the water column. In the shallowest locations, water near the surface contained sufficient oxygen to support fish species that may be using these areas. This effect was short-lived. By mid-June no discernable differences could be found between the data sets from the large-scale and small-scale treatment lakes.

Water Quality

The results of the water quality monitoring conducted on the large-scale and small-scale treatment lakes within the Legend Lake system in 2008 are shown in **Tables 3 and 4**, respectively. An explanation of these results is given in the following paragraphs.

Total Phosphorus is one of the most important water quality indicators. Phosphorus levels determine the amount of plant and algae growth in a lake. The average phosphorus concentration for natural lakes in Wisconsin is 25 µg/L. Values above 50 µg/L are indicative of poor water quality. Phosphorus concentrations throughout the Legend Lake system were consistently at or below 20 µg/L, which is indicative of good water quality. A comparison of the large-scale and small-scale treated lakes showed no significant difference in average phosphorus concentrations in the months following treatment.

Chlorophyll data is used to estimate how much phytoplankton (algae) there is in the lake. Generally speaking, the more nutrients there are in the water and the warmer the water, the higher the production of algae and consequently chlorophyll. Chlorophyll concentrations below 10 µg/l are most desirable for lakes. All chlorophyll readings for both the large-scale and small-scale treated lakes were well below this level. For unknown reasons, the highest chlorophyll levels were recorded during the pre-treatment water sampling in May.

Secchi Transparency, a measure of water clarity, is often used as a quick and easy test for a lake's overall water quality; especially in relation to the amount of algae present. There is an inverse relationship between Secchi depth and the amount of suspended matter, including algae, in the water column. Water clarity readings collected for Legend Lake ranged between 1.8 and 4.3 meters in depth. These readings again indicate good water quality and showed no discernable difference between large-scale and small-scale treated lakes.

Table 3. Results of the 2008 water quality analysis in the large-scale treatment lakes of Legend Lake, Menominee County, Wisconsin.

Large-scale Treatments									
Location	**Sample Date**	**Phosphorus (µg/l)**	**Phosphorus TSI**	**Chlorophyll a (ug/l)**	**Chlorophyll a TSI**	**Secchi Depth (m)**	**Secchi TSI**	**Average TSI**
Wahtosah	May*	18	45.83	4.95	46.29	3.7	41.19	44.44
	June	15	43.20	0.54	24.56	3.6	41.71	36.49
	July	14	42.21	0.40	21.61	3.4	42.57	35.46
	August	20	47.35	0.49	23.60	2.3	47.71	39.55
	September	20	47.35	7.24	50.02	2.3	48.09	48.48
Skice	May*	16	44.13	4.08	44.39	3.4	42.31	43.61
	June	14	42.21	0.36	20.58	4.0	40.05	34.28
	July	12	39.98	0.74	27.65	2.7	45.46	37.70
	August	16	44.13	0.82	28.65	2.4	47.34	40.04
	September	18	45.83	5.77	47.79	2.3	48.09	47.24
Sapokesik	May*	19	46.61	5.30	46.96	1.8	51.30	48.29
	June	11	38.73	1.11	31.62	2.9	44.57	38.31
	July	12	39.98	0.29	18.46	2.3	48.09	35.51
	August	12	39.98	0.37	20.85	2.9	44.68	35.17
	September	12	39.98	3.45	42.75	3.4	42.57	41.77
Averages		15	43.17	2.39	33.05	2.9	45.05	40.42

* May data are results from the pre-treatment sampling event

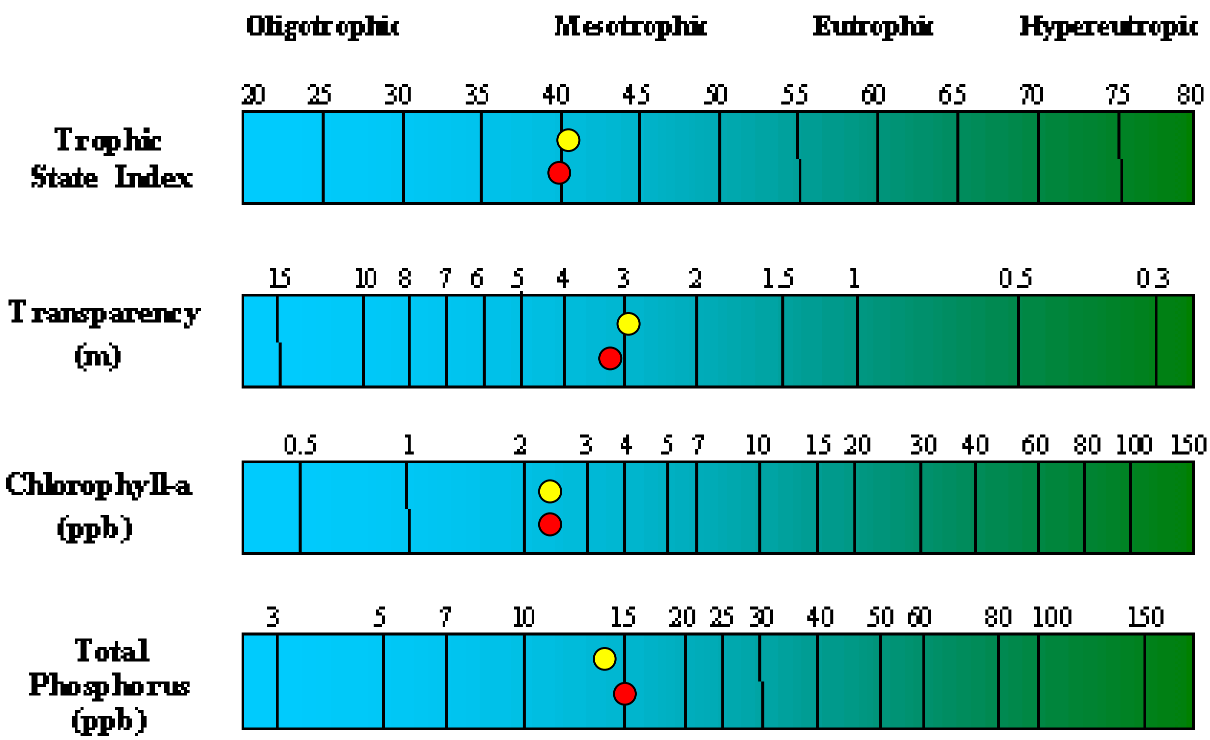
Table 4. Results of the 2008 water quality analysis in the small-scale treatment lakes of Legend Lake, Menominee County, Wisconsin.

Small-scale Treatments								
Location	**Sample Date**	**Phosphorus (µg/l)**	**Phosphorus TSI**	**Chlorophyll a (ug/l)**	**Chlorophyll a TSI**	**Secchi Depth (m)**	**Secchi TSI**	**Average TSI**
Main Channel	May*	16	44.13	4.41	45.16	>2.6	--	44.64
	June	20	47.35	1.39	33.83	2.1	49.39	43.52
	July	15	43.20	0.71	27.24	>2.4	--	35.22
	August	14	42.21	ND	--	>2.1	--	42.21
	September	14	42.21	3.84	43.80	2.1	49.50	45.17
Spring	May*	20	47.35	4.72	45.82	2.8	45.30	46.16
	June	17	45.00	3.21	42.04	3.2	43.27	43.44
	July	13	41.14	0.81	28.53	2.7	45.46	38.38
	August	16	44.13	0.36	20.58	3.3	42.97	35.89
	September	15	43.20	3.47	42.81	3.8	40.84	42.28
Peshtigo	May*	18	45.83	3.67	43.35	2.7	45.62	44.93
	June	16	44.13	1.97	37.25	3.3	42.97	41.45
	July	13	41.14	0.45	22.77	2.7	45.46	36.45
	August	12	39.98	0.53	24.37	3.2	43.38	35.91
	September	12	39.98	2.83	40.81	4.3	38.99	39.93
Little Blacksmith	May*	20	47.35	4.85	46.09	3.2	43.24	45.56
	June	16	44.13	1.42	34.04	3.3	43.00	40.39
	July	12	39.98	0.76	27.91	2.6	46.28	38.06
	August	14	42.21	0.56	24.91	3.0	44.23	37.12
	September	15	43.20	4.82	46.03	3.5	41.93	43.72
Big Blacksmith	May*	17	45.00	6.33	48.70	3.1	43.65	45.79
	June	12	39.98	1.42	34.04	3.5	41.77	38.60
	July	11	38.73	0.53	24.37	3.7	41.31	34.80
	August	12	39.98	0.38	21.11	3.0	44.23	35.11
	September	12	39.98	3.41	42.63	3.8	40.84	41.15
Pywaosit	May*	18	45.83	6.07	48.29	3.5	41.93	45.35
	June	15	43.20	0.65	26.37	3.5	42.08	37.22
	July	11	38.73	0.44	22.55	2.9	44.68	35.32
	August	12	39.98	0.40	21.61	3.0	44.09	35.23
	September	13	41.14	3.55	43.03	3.7	41.07	41.75
Averages		14	41.96	2.37	34.11	3.3	42.96	39.68

* May data are results from the pre-treatment sampling event

Trophic State is a measure of a lake's productivity. There is a strong relationship between levels of phosphorus, chlorophyll and water clarity in lakes. Values measured for total phosphorus, chlorophyll and Secchi depth are often used to calculate Trophic State Index (TSI) values. The higher the TSI value the lower the water quality. Generally speaking, TSI values below 50 are most desirable for lakes. TSI values calculated from both large-scale and small-scale treated lakes in the Legend Lake system in 2008 were consistently below this level and but were highest prior to treatment (**Tables 4 and 5**). Water quality measurements taken throughout this study placed all of the lakes well within the boundaries of a mesotrophic state (**Figure 5**).

Figure 5. Water quality comparison between large-scale and small-scale treatment lakes within the Legend Lake system in 2008.

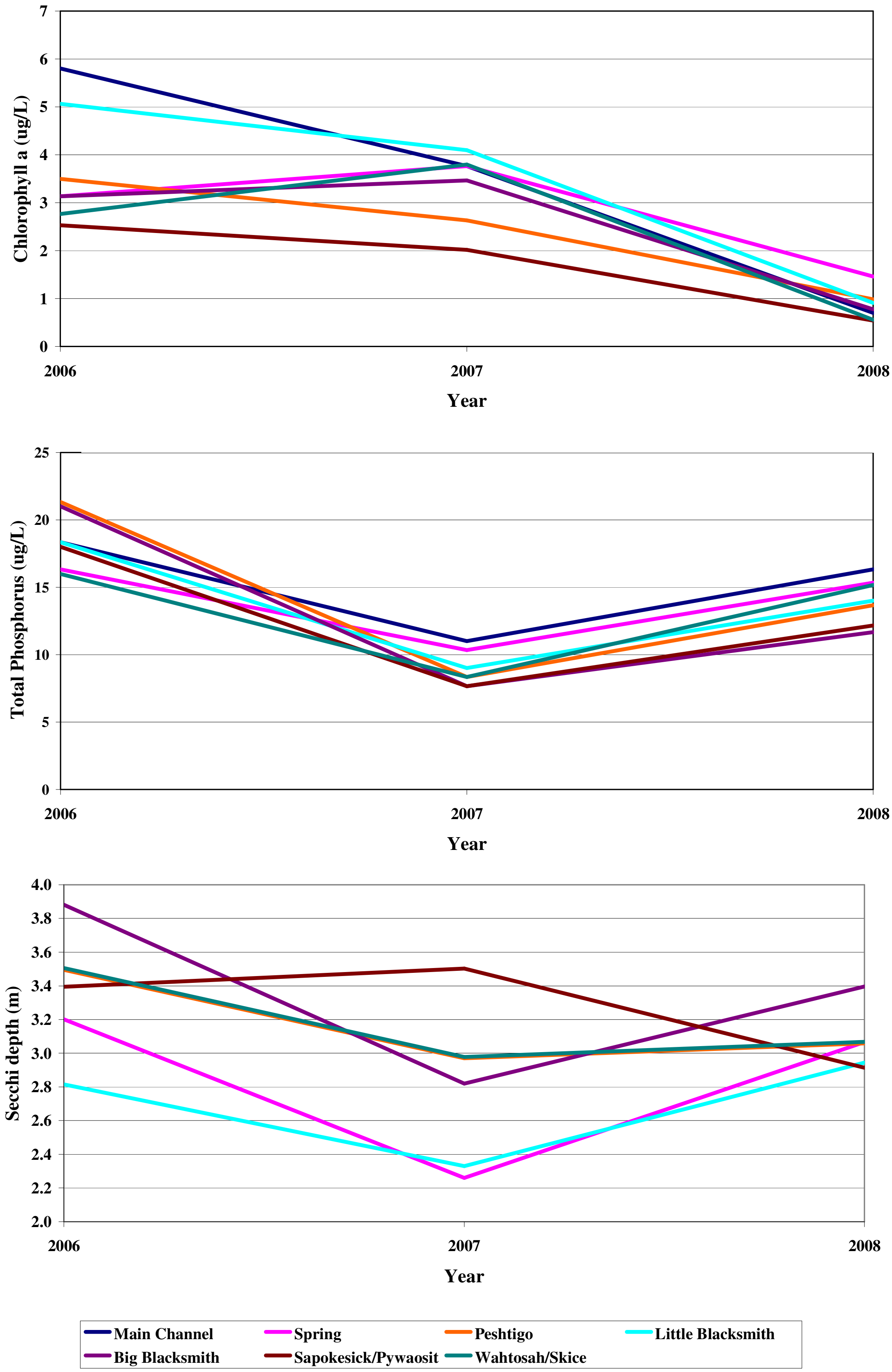


Season-long averages for large-scale ( ) and small-scale ( ) lakes.

Long-term Trends

Figure 6 presents water quality data from 2006 to 2008 for the Legend Lake system. Average values for chlorophyll a, total phosphorus and Secchi depth were compiled for summer months (June, July and August) for each lake basin. These data show a gradual decline in chlorophyll concentrations for all lakes from 2006 to 2008. System-wide similarities in total phosphorus are very apparent, with concentrations falling in all lake basin in 2007 and increasing again in 2008. These trends are not seen in the water transparency data. Most lakes showed a drop in clarity in 2007 which rebounded in

Figure 6. Changes in summer water quality parameters (chlorophyll, phosphorus, and Secchi depth) in the Legend Lake system from 2006-2008.



2008. However, from lake to lake on any given year, there appears to be greater variability than with other parameters.

2,4-D Assays

Table 5 shows the results of the 2,4-D assays conducted on the Legend Lake system between 7 and 42 days after the May 2008 treatments. The assays reflect the herbicide residue concentrations achieved after applications of Navigate® at rates between 100-150 lbs/acre. The Navigate® product label cites three studies where concentrations of 2,4-D were found to be non-detectable 14 DAT. However, in 2006 and 2007 significant 2,4-D concentrations were detected 14 DAT. Because of this, assays were conducted up to 42 days after treatment. By 42 DAT all herbicide residue concentrations had fallen below 100 μg/L. Site 3 showed an increase in concentration between 28 and 35 DAT. Herbicides were not applied to the Legend Lake system as part of this program during that time period. As a result, this is likely an anomalous reading.

Table 5. Results of 2008 herbicide residue analyses collected pre-treatment and 7-43 days post-treatment for Legend Lake, Menominee County, (treatment dates May, 19-20 and May 27-29, 2008).

Site #	**1**	**2**	**3**	**4**	**10**	**11**	**12**	**13**
Location	WAHTOS	WAHTOS	MED HAT	SKICE	W EAGLE	SAPOK	H SHOE	SAPOK
Application Rate	100	100	100	100	100	100	100	100
Treatment Date	20-May	27-May	27-May	20-May	19-May	19-May	19-May	28-May
8-May	**3.1** PRE	**1.2** PRE	**2.8** PRE	**<0.7** PRE	**<0.7** PRE	**0.8** PRE	**0.8** PRE	**0.9** PRE
27-May	**229.0** 7 DAT			**138.0** 7 DAT	**245.0** 8 DAT	**127.0** 8 DAT		
3-Jun		**155.0** 7 DAT		**228.0** 14 DAT		**196.0** 15 DAT		
10-Jun	**408.0** *21 DAT*	**310.0** 14 DAT	**433.0** 14 DAT	**340.0** *21 DAT*	**218.0** *22 DAT*	**209.0** *22 DAT*	**212.0** *22 DAT*	**208.0** *13 DAT*
17-Jun	**278.0** 28 DAT	**330.0** 21 DAT	**611.0** *21 DAT*	**250.0** 28 DAT	**7.5** 29 DAT	**<0.7** 29 DAT	**6.9** 29 DAT	**2.5** 20 DAT
25-Jun	**100.0** 36 DAT	**528.0** *29 DAT*	**162.0** 29 DAT	**200.0** 36 DAT	**1.1** 37 DAT	**<0.7** 37 DAT	**<0.7** 37 DAT	**<0.7** 28 DAT
2-Jul	**44.3** 43 DAT	**83.4** 36 DAT	**286.0** 36 DAT	**90.0** 43 DAT	**2.2** 44 DAT	**1.0** 44 DAT	**1.2** 44 DAT	**0.9** 35 DAT

Site #	**5**	**6**	**7**	**8**	**9**	**14**	**15**
Location	M. CHAN	SPRING	PESHTIG	LBS	BBS	PYWAO	DAM
Application Rate	150	150	150	150	150	150	150
Treatment Date	29-May	29-May	29-May	29-May	29-May	28-May	28-May
8-May	**0.7** PRE	**<0.7** PRE	**<0.7** PRE	**<0.7** PRE	**<0.7** PRE	**<0.7** PRE	**<0.7** PRE
3-Jun	**17.4** 5 DAT	**31.5** 5 DAT	**40.0** 5 DAT	**25.9** 5 DAT	**15.4** 5 DAT	**153.0** 6 DAT	**137.0** 6 DAT
10-Jun	**1.9** 12 DAT	**38.8** *12 DAT*	**88.2** *12 DAT*	**38.5** 12 DAT	**32.8** *12 DAT*	**212.0** *13 DAT*	**174.0** *13 DAT*
17-Jun	**24.7** *19 DAT*	**23.0** 19 DAT	**49.4** 19 DAT	**40.7** *19 DAT*	**32.6** 19 DAT	**<0.7** 20 DAT	**<0.7** 20 DAT
25-Jun	**7.1** 27 DAT	**5.2** 27 DAT	**14.4** 27 DAT	**12.0** 27 DAT	**21.4** 27 DAT	**<0.7** 28 DAT	**0.7** 28 DAT
2-Jul						**0.8** 35 DAT	**0.9** 35 DAT
11-Jul	**1.0** 43 DAT	**<0.7** 43 DAT	**<0.7** 43 DAT	**1.4** 43 DAT	**2.0** 43 DAT		

Aquatic Plant Survey Results

Appendix B presents the summary results of the August 2008 point-intercept aquatic plant survey conducted by Wisconsin Lake & Pond Resource staff. As a means to compare pre- and post-treatment data, **Appendix B** also presents the August 2007 data collected by the Wisconsin DNR's Bureau of Research. The values shown in the table represent the percent frequency of occurrence for each species identified. Statistical (paired t-tests) were conducted on all plant species in the large-scale treated lakes (Wahtosha/Skice, Sapokesick and Pywaosit). Analysis was used to determine whether or not significant changes occurred in the frequency of Eurasian watermilfoil as well as native aquatic plant species. By selecting the large-scale treatments only for statistical analysis, comparisons were able to be made between data sets from untreated and treated lakes. Statistical analysis was not conducted on the small-scale treatment basins since they all had been previously treated and comparisons of 2007 and 2008 data would not reflect pre- and post-treatment results.

Results of the statistical analysis can, in some cases, appear counterintuitive. For example, if the frequency of occurrence for a particular species dropped by 50% between 2007 and 2008 one would expect this change to be statistically significant. In many cases this would be true. However, in cases when the initial frequency is relatively low, a 50% decrease does not necessarily result in a significant decline. The formulas used in statistical analysis were developed with the understanding that a large number of factors can influence the data collected. As a result, at low frequencies, factors unrelated to the effect being studied, in this case chemical treatment, can influence the outcome. These changes therefore should not be interpreted as a significant change in frequency attributable to the treatment.

Treatments in 2008 have further reduced the distribution of Eurasian watermilfoil in the Legend Lake system. Slight increases in Eurasian watermilfoil were found in Main Channel, Spring and Little Blacksmith Lakes. However these lakes were among the small-scale treatment lakes and each have less than 15 acres of milfoil (**Table 1**). The remaining lake basins showed declines in Eurasian watermilfoil. This includes all the large-scale treatment lakes as well as the small-scale treatment lakes Peshtigo and Big Blacksmith. Overall, treatments in 2008 resulted in a 69% reduction of Eurasian watermilfoil in the Legend Lake system.

The Navigate® label lists a number of other plant species as susceptible or slightly to moderately resistant to 2,4-D applications at these rates. These species have been highlighted in bold in **Appendix B**. Many of these species do not show consistent changes between the large-scale and small-scale treated lakes. For example, although coontail (*Ceratophyllum demersum*) declined in many of the lakes it showed an increase in Wahtohsah and Skice Lakes which were among the large-scale treatment lakes. Likewise, native pondweeds which are not considered susceptible to 2,4-D treatments showed increases in some large-scale treatment lakes and decreases in others. The bladderworts also showed increases in some lakes and decreases in others. One species that showed consistent declines in the large-scale treatment lakes is northern watermilfoil

(*Myriophyllum sibiricum*). Northern watermilfoil also declines in Peshtigo Lake, a small-scale treatment lake. However, it increased in both Little Blacksmith and Big Blacksmith Lakes. These lakes were more heavily treated in 2006 and 2007. At the time of these treatments, data showed a significant decline in northern watermilfoil in these lakes. However, it would appear that as the follow-up treatment sizes have declined in these lakes, northern watermilfoil has begun to rebound. Again, none of these changes have been analyzed for statistical significance.

Conclusions and Recommendations

In the third year of treatments on the Legend Lake system, the full distribution of Eurasian watermilfoil was treated for the first time. Original concerns over oxygen depletion, impacts to native plants and impacts to water quality have been addressed over the past three years. To minimize these effects, a phased approach to treatments was implemented. In addition, a detailed post-treatment lake monitoring effort was conducted for three years. The results of this monitoring effort showed minimal or temporary impacts to dissolved oxygen concentrations, water quality parameters or native plant communities.

Action Plan

Eurasian watermilfoil treatment strategies
It is imperative to target all Eurasian watermilfoil identified in the Legend Lake system annually. The aggressive nature of the plant will allow it to quickly repopulate treated areas if other areas are left untreated. Aggressively targeting all known Eurasian watermilfoil in 2009 and beyond will be necessary.

Lake-specific treatment needs are detailed in **Figures 7** and **8**. In order to lessen impacts to dissolved oxygen and lake water quality, it will be important to conduct all large-scale treatments early in the season. The ideal time to treat Eurasian watermilfoil is when it is found to begin actively growing throughout the target treatment area. Plant growth stage should dictate treatment timing, not water temperature or calendar date. Therefore it will again be essential to monitor plant growth stages early in the season to determine ideal timing.

Ideal plant growth stages have tended to occur in a 2-3 week window during May on Legend Lake. If surviving or re-growing plants are found later in the season, they can and should be treated. Generally this occurs six to eight weeks after the initial treatment. It will also be important to suspend weed harvesting operations in all areas of the system where Eurasian watermilfoil is being actively managed.

Because increasing the application rate from 100 to 150 appears to increase the level of Eurasian watermilfoil control while having minimal impacts to native plant, use of the higher rate in selected locations is warranted in 2009 as well.

The Legend Lake P & R District intends to continue treating the full distribution of Eurasian watermilfoil within the Legend Lake system with Navigate® for the foreseeable future to achieve and maintain the goals of this project. Contiguous beds less than or equal to 5 acres, or beds having an average depth greater than 8 feet, will be treated at 150 lbs/acre. Beds greater than 5 acres will be treated at 100 lbs/acres.

A number of shallow areas exist, particularly in Spring, Peshtigo and Big Blacksmith Lakes, which are not navigable by boat. These areas may harbor healthy populations of exotic species. These areas will be explored in an effort to both determine the extent of exotic species and to develop treatment strategies.

The presence of curly-leaf pondweed is a growing concern for the Lake District. In 2009 a mapping survey of known curly-leaf pondweed beds will be conducted to determine the extent of this species. If it is determined that treatment of curly-leaf pondweed will need to take place, strategies will be developed. As this is a separate issue not included in the existing grant, additional grant funding options for management (e.g. WDNR's Rapid Response AIS grant program) will be pursued.

Monitoring
The results of the lake monitoring efforts over the past three years indicate that the early season treatment strategy utilized on Legend Lake did not result in significant oxygen depletion or degraded water quality. Furthermore, few native plants were harmed by the treatment and were able to flourish. The treatments were also effective in producing a significant reduction in Eurasian watermilfoil frequency and area, and were also effective in restoring traditional recreational uses to the treated lakes.

As in previous years, to monitor treatment success and plant community responses, an aquatic plant survey that duplicates previous methods will be conducted in August 2009. October milfoil mapping surveys should also be done. Monitoring of ecological responses by testing parameters such as dissolved oxygen, Secchi depth, pH, total phosphorus and chlorophyll *a*, in each lake basin at designated intervals following treatments will also continue in 2009. The same level of effort in monitoring 2,4-D concentrations may not be necessary in 2009; however some assays will be scheduled to determine water use restrictions.

Harvesting
If areas of native plant growth become a nuisance, selected locations may be harvested in 2009 and beyond. It will be important to first determine if Eurasian watermilfoil is present in these locations and determine the best course of action. The risk of spreading Eurasian watermilfoil will need to be weighed against the need for navigation.

Evaluating Success

The stated goal of the Legend Lake Eurasian watermilfoil Control Project is to restore lake ecology and traditional lake uses as closely as possible to conditions found prior to invasion by Eurasian watermilfoil.

The primary objective of the project is to reduce Eurasian watermilfoil distribution in Legend Lake to less than 10% of pre-treatment distribution, and to maintain Eurasian watermilfoil distribution at or below this level for the long-term. To date, a total of 816 acres of Eurasian watermilfoil have occurred in the Legend Lake System. If the system-wide distribution of Eurasian watermilfoil can be reduced to 81 acres or less, the project will most certainly be considered successful.

Based on observations in 2008, it may be more realistic to revise the goals of this project. While significant reductions in Eurasian watermilfoil area are the preferred measure of success, treatment success can also be measure as a reduction of plant biomass or density. This is best measured by frequency of occurrence in the point intercept plant survey data. If Eurasian watermilfoil can be reduced to less than 10% of pre-treatment frequency, then traditional recreational uses will have been restored and lake ecology will have been protected. Therefore this should also be considered a measure of success.

Figure 7. October 2008 distribution of Eurasian watermilfoil (*Myriophyllum spicatum*) in selected lake basins of Legend Lake.

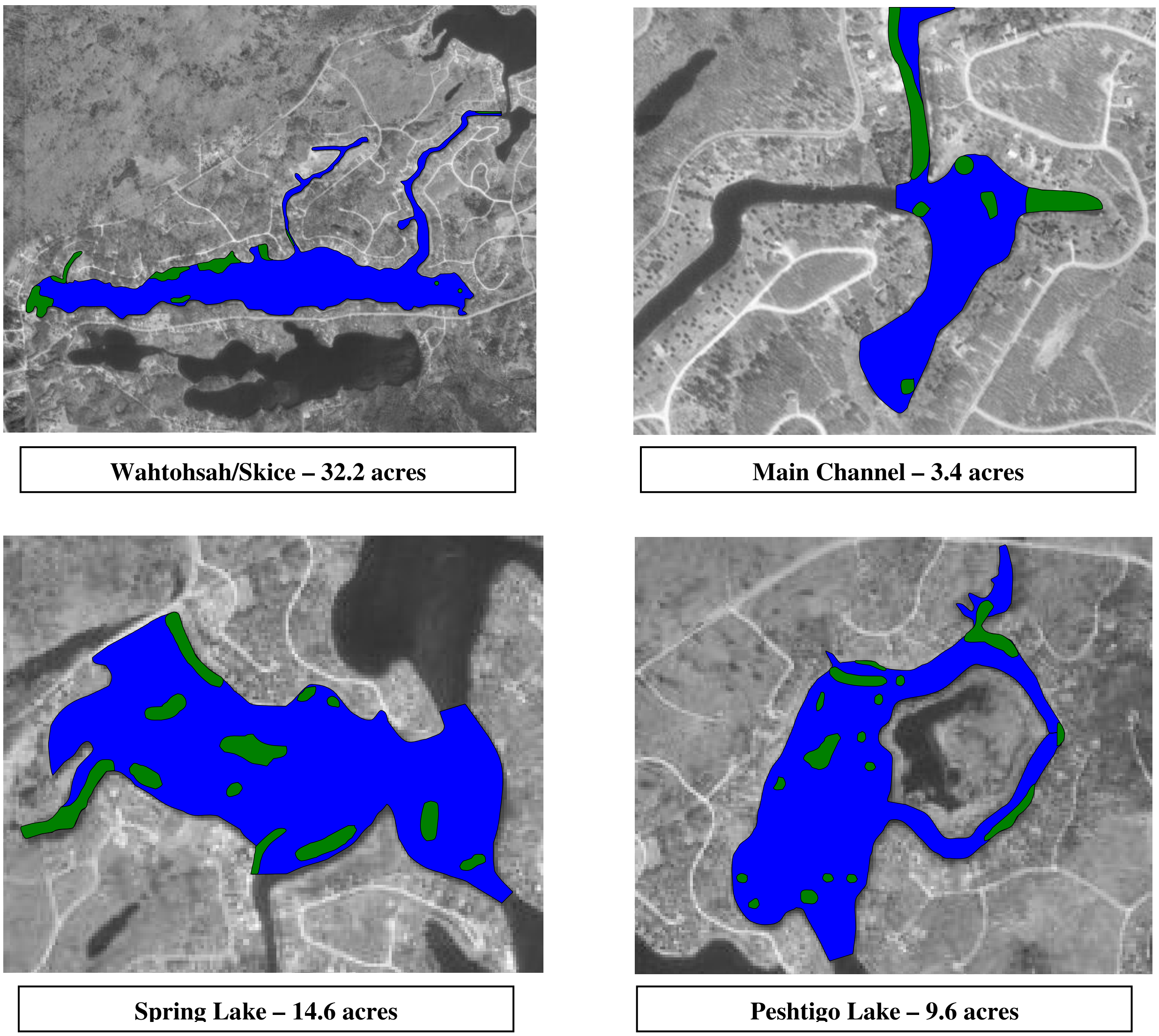
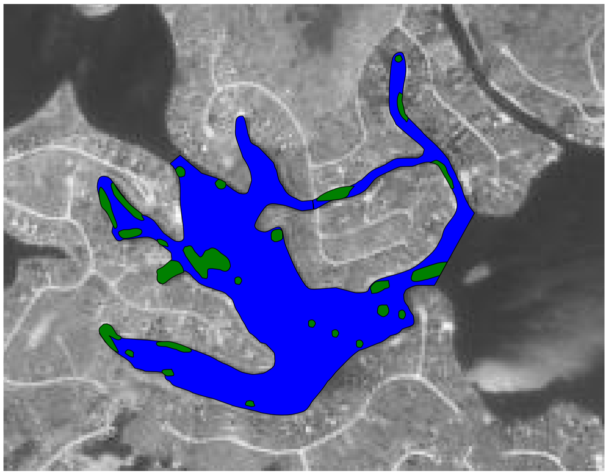
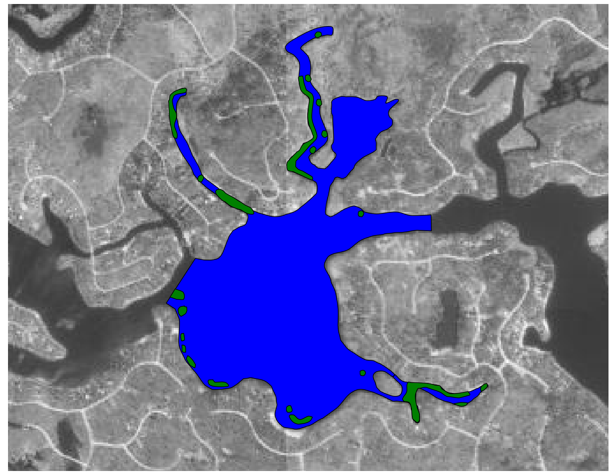


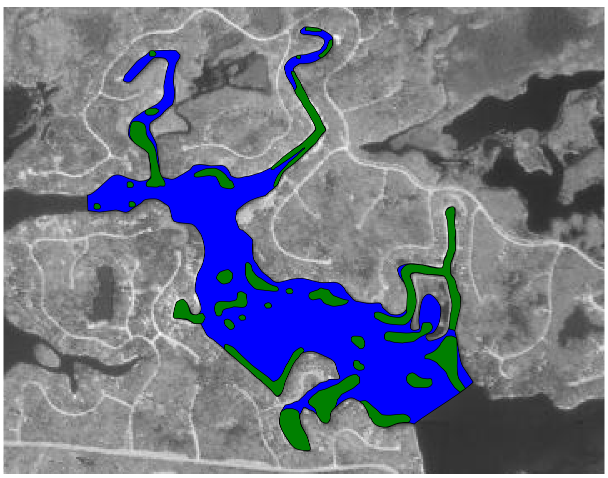
Figure 8. October 2008 distribution of Eurasian watermilfoil (*Myriophyllum spicatum*) in selected lake basins of Legend Lake.



Little Blacksmith Lake – 9.9 acres



Big Blacksmith Lake – 13.4 acres



Sapokesick Lake – 65.9 acres

Pywaosit Lake – 7.4 acres

Appendix A

2008 Legend Lake Dissolved Oxygen and Temperature Data

2008 Legend Lake Dissolved Oxygen and Temperature Data

Wahtohsah *highlighted values indicate epilimnetic oygen depletion; red lines indicate depth of stratification*

Depth	May 7, 2008 - site 1 (west)			May 7, 2008 - site 2 (deep)			May 7, 2008 - site 3 (north channel)		
(ft)	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	57.6	10.83	105.2%	55.9	11.83	112.7%	59.3	11.25	112.5%
1									
2	57.5	10.81	104.6%	55.8	11.64	110.7%	59.4	11.26	113.2%
3									
4	57.0	10.91	105.1%	55.7	11.50	109.8%	58.1	11.72	113.3%
5									
6	56.9	10.97	105.5%	55.5	11.57	109.5%	55.1	12.62	119.5%
7									
8	55.0	11.05	105.5%	55.3	11.75	111.6%			
9									
10	54.2	11.40	106.2%	54.9	11.65	109.9%			
11									
12	53.9	11.34	105.4%	53.8	11.93	109.7%			
13									
14	52.6	11.32	103.8%	53.0	11.52	105.5%			
15									
16	52.1	11.16	101.4%	52.7	11.08	101.6%			
17									
18				52.5	11.30	103.3%			
19									
20				52.0	11.21	101.7%			
21									
22				50.9	11.31	100.1%			
23									
24				50.2	10.93	96.0%			
25									
26				49.2	9.74	87.0%			
27									
28				48.9	9.81	83.8%			
29									
30				48.0	8.06	68.5%			
31									
32				45.6	2.75	14.4%			
33									
34									
35									
36									
37									
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2008 Legend Lake Dissolved Oxygen and Temperature Data

Wahtohsah

Depth	May 30, 2008 - site 1 (west)			May 30, 2008 - site 2 (deep)			May 30, 2008 - site 3 (north channel)		
(ft)	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	64.8	9.29	102.7%	64.2	9.92	109.0%	64.5	11.7	128.8%
1									
2	64.4	9.35	102.8%	64.1	9.91	108.8%	64.3	11.7	128.7%
3									
4	64.1	9.39	102.9%	64.0	9.96	109.2%	64.0	11.6	127.1%
5									
6	63.9	9.31	101.8%	64.0	9.97	109.3%	63.7	11.4	124.5%
7									
8	63.8	9.17	100.3%	64.0	9.98	109.4%	61.9	2.55	27.3%
9									
10				63.9	9.99	109.5%			
11									
12				63.9	9.98	109.2%			
13									
14				63.8	9.87	108.0%			
15									
16				62.9	9.17	99.3%			
17									
18				61.7	8.99	95.9%			
19									
20				56.3	10.80	108.4%			
21									
22				53.7	10.50	101.8%			
23									
24				52.0	8.91	84.4%			
25									
26				50.2	5.93	54.9%			
27									
28				48.7	3.01	27.4%			
29									
30				47.3	0.19	1.7%			
31									
32				45.5	0.04	0.3%			
33									
34									
35									
36									
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2008 Legend Lake Dissolved Oxygen and Temperature Data

Wahtohsah

Depth	June 5, 2008 - site 1			June 5, 2008 - site 2			June 5, 2008 - site 3		
(ft)	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	64.3	8.86	97.3%	64.3	8.91	97.8%	63.5	10.8	117.5%
1									
2	64.5	8.78	96.7%	64.4	8.87	97.6%	63.6	10.8	118.0%
3									
4	64.5	8.81	96.9%	64.4	8.84	97.2%	63.5	10.9	118.7%
5									
6	64.5	8.80	96.9%	64.4	8.79	96.7%	62.8	8.85	95.4%
7									
8	64.5	8.79	96.8%	64.4	8.77	96.5%	58.1	0.96	9.9%
9									
10	64.5	8.71	96.0%	64.4	8.75	96.3%			
11									
12	64.5	8.51	93.7%	64.4	8.70	95.7%			
13									
14	64.2	7.58	83.3%	64.2	0.89	8.8%			
15									
16	63.7	6.36	69.7%	64.2	0.22	2.2%			
17									
18				64.0	0.06	0.6%			
19									
20				63.9	0.01	0.1%			
21									
22									
23									
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2008 Legend Lake Dissolved Oxygen and Temperature Data

Wahtohsah

Depth	June 10, 2008 - site 1			June 10, 2008 - site 2			June 10, 2008 - site 3		
(ft)	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	70.8	10.0	118.1%	TOO WINDY			74.1	11.0	134.7%
1									
2	70.8	10.0	118.2%				73.5	11.1	135.1%
3									
4	70.8	10.0	118.2%				73.1	11.2	135.5%
5									
6	70.8	10.1	118.3%				69.5	12.9	150.5%
7									
8	69.7	11.1	128.7%				63.8	20.0	200.0%
9									
10	68.0	7.46	85.9%						
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
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2008 Legend Lake Dissolved Oxygen and Temperature Data

Wahtohsah

Depth	June 17, 2008 - site 1			June 17, 2008 - site 2			June 17, 2008 - site 3		
(ft)	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	68.8	8.26	91.5%	69.1	8.75	102.1%	69.2	10.35	113.2%
1									
2	68.8	8.14	90.5%	69.0	8.31	92.1%	69.0	10.17	111.7%
3									
4	68.8	7.89	90.5%	69.0	8.26	92.0%	68.4	10.49	115.4%
5									
6	68.8	7.76	86.0%	69.0	8.33	92.7%	67.9	10.99	118.3%
7									
8	68.6	7.56	83.7%	68.9	8.13	90.9%			
9									
10	68.4	7.70	83.8%	68.9	8.38	92.9%			
11									
12	68.2	7.35	80.2%	68.9	8.17	91.1%			
13									
14				68.9	8.22	90.7%			
15									
16				68.8	8.24	90.6%			
17									
18				68.5	7.78	86.7%			
19									
20				64.2	6.12	64.0%			
21									
22				57.3	6.92	67.3%			
23									
24				53.8	7.05	65.7%			
25									
26				51.3	4.22	36.5%			
27									
28				50.4	1.76	13.1%			
29									
30				48.5	0.37	3.0%			
31									
32				47.3	0.34	3.0%			
33									
34				45.9	0.18	1.4%			
35									
36									
37									
38									
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40									
41									
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2008 Legend Lake Dissolved Oxygen and Temperature Data

Wahtohsah

Depth	June 25, 2008 - site 1			June 25, 2008 - site 2			June 25, 2008 - site 3		
(ft)	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	73.9	8.25	96.8%	74.4	8.70	101.7%	74.5	11.80	136.8%
1									
2	73.7	8.32	96.9%	74.3	8.83	104.0%	74.1	11.60	136.3%
3									
4	73.5	8.72	101.4%	73.7	8.89	103.7%	73.5	11.63	133.8%
5									
6	73.3	8.40	97.4%	73.5	8.83	102.6%	70.9	17.72	200.5%
7									
8	72.9	7.96	94.4%	73.4	8.79	102.7%			
9									
10	72.5	7.51	85.4%	72.9	8.68	99.6%			
11									
12	72.1	6.26	77.0%	72.0	8.60	97.5%			
13									
14				71.1	7.30	82.0%			
15									
16				70.1	6.52	72.9%			
17									
18				68.7	6.20	67.9%			
19									
20				64.0	5.88	61.8%			
21									
22				58.8	6.03	59.0%			
23									
24				54.5	5.72	53.7%			
25									
26				51.6	1.85	16.9%			
27									
28				50.0	0.34	2.7%			
29									
30				48.4	0.22	1.9%			
31									
32				47.2	0.19	1.6%			
33									
34				45.8	0.13	1.1%			
35									
36									
37									
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40									
41									
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2008 Legend Lake Dissolved Oxygen and Temperature Data

Wahtohsah

Depth	July 3, 2008 - Site 1			July 3, 2008 - Site 2			July 3, 2008 - Site 3		
(ft)	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	76.8	8.68	104.2%	76.0	8.62	103.3%	75.6	11.01	129.2%
1									
2	76.9	8.54	103.1%	76.0	8.55	101.7%	75.6	11.11	122.8%
3									
4	76.2	8.23	99.2%	76.0	8.48	101.6%	73.8	10.70	127.8%
5									
6	75.8	8.18	96.8%	75.8	8.38	100.2%	71.4	21.30	237.5%
7									
8	74.2	9.13	106.4%	75.5	8.30	100.3%			
9									
10				75.4	8.50	101.9%			
11									
12				75.3	8.51	101.9%			
13									
14				74.6	7.97	93.6%			
15									
16				73.6	8.04	65.4%			
17									
18				71.4	5.90	66.8%			
19									
20				68.4	5.28	58.6%			
21									
22				67.0	4.74	64.2%			
23									
24				57.4	4.46	43.2%			
25									
26				54.7	2.28	23.3%			
27									
28				53.1	0.43	3.2%			
29									
30				51.6	0.27	2.8%			
31									
32				50.0	0.24	2.0%			
33									
34				47.7	0.10	1.0%			
35									
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37									
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2008 Legend Lake Dissolved Oxygen and Temperature Data

Wahtohsah

Depth	August 7, 2008 - Site 1			August 7, 2008 - Site 2			August 7, 2008 - Site 3		
(ft)	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	77.9	7.41	90.4%	78.1	7.42	91.4%	76.0	8.71	104.1%
1									
2	78.0	7.36	89.8%	78.2	7.39	90.4%	76.0	9.07	108.7%
3									
4	78.0	7.42	91.2%	78.2	7.05	87.4%	75.8	8.71	103.5%
5									
6	78.0	7.30	89.1%	78.2	7.28	89.9%	75.2	8.88	105.9%
7									
8	78.0	7.22	88.5%	78.2	7.32	90.1%			
9									
10	78.0	7.09	87.0%	78.2	6.88	85.0%			
11									
12	77.9	6.61	80.6%	78.2	6.70	83.0%			
13									
14				78.0	6.51	80.1%			
15									
16				76.0	4.80	56.0%			
17									
18				72.8	2.96	34.2%			
19									
20				65.7	0.25	2.6%			
21									
22				61.6	0.20	2.0%			
23									
24				57.4	0.16	1.6%			
25									
26				53.5	0.15	1.5%			
27									
28				52.1	0.13	1.2%			
29									
30				50.5	0.13	1.2%			
31									
32				48.1	0.13	1.1%			
33									
34				47.3	0.12	1.0%			
35									
36				46.2	0.10	0.8%			
37									
38				45.7	0.09	0.8%			
39									
40				45.5	0.09	0.7%			
41									
42				45.6	0.10	0.8%			
43									
44				45.7	0.10	0.9%			
45									
46									
47									
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2008 Legend Lake Dissolved Oxygen and Temperature Data

Wahtohsah

Depth	September 3, 2008 - Site 1			September 3, 2008 - Site 2			September 3, 2008 - Site 3		
(ft)	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	75.1	7.89	93.4%	75.1	8.05	95.1%	74.0	8.11	94.8%
1									
2	75.1	7.37	88.2%	75.2	7.56	89.7%	74.1	7.81	91.5%
3									
4	75.1	7.47	88.0%	75.2	7.69	91.2%	73.6	8.05	93.8%
5									
6	75.1	7.23	85.6%	75.2	7.49	90.2%	68.0	5.57	60.3%
7									
8	75.1	7.66	90.7%	75.2	7.48	88.8%			
9									
10	75.1	7.09	84.3%	75.2	7.35	87.7%			
11									
12				75.1	7.60	90.3%			
13									
14				73.5	6.84	80.7%			
15									
16				72.6	6.02	69.8%			
17									
18				71.6	4.50	50.8%			
19									
20				69.0	1.27	14.2%			
21									
22				63.9	0.21	2.0%			
23									
24				59.7	0.16	1.6%			
25									
26				57.1	0.15	1.4%			
27									
28				53.4	0.14	1.2%			
29									
30				50.2	0.12	1.1%			
31									
32				48.5	0.12	1.0%			
33									
34				47.6	0.11	1.0%			
35									
36				46.6	0.10	0.8%			
37									
38				46.4	0.09	0.7%			
39									
40									
41									
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2008 Legend Lake Dissolved Oxygen and Temperature Data

Skice *highlighted values indicate epilimnetic oygen depletion; red lines indicate depth of stratification*

Depth	May 7, 2008 - site 4 (deep)			May 30, 2008 - site 4 (deep)			June 5, 2008 - site 4		
(ft)	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	55.1	12.34	116.3%	65.3	9.74	108.5%	65.1	8.99	99.7%
1									
2	55.1	11.95	112.9%	65.0	9.81	108.9%	65.1	8.99	99.6%
3									
4	55.0	11.97	112.7%	64.9	9.81	108.7%	65.1	8.98	99.6%
5									
6	55.0	11.84	111.7%	64.8	9.80	108.4%	65.1	8.99	99.7%
7									
8	55.0	11.95	112.5%	64.7	9.76	107.9%	65.1	9.00	99.7%
9									
10	55.0	11.62	109.0%	64.6	9.62	106.2%	65.0	8.95	99.3%
11									
12	55.0	11.81	111.4%	64.1	9.77	107.3%	65.0	8.91	98.8%
13									
14	54.8	11.76	110.6%	63.7	9.62	105.2%	64.7	8.61	95.2%
15									
16	54.3	11.36	106.7%	63.2	9.56	103.9%	64.6	8.51	93.8%
17									
18	52.9	11.37	104.4%	61.4	8.96	95.4%	63.3	8.04	87.0%
19									
20	50.1	11.16	98.5%	56.6	9.10	91.5%	59.3	7.77	80.2%
21									
22	49.0	10.40	91.2%	53.1	9.01	86.6%	55.5	6.88	68.0%
23									
24	48.5	10.30	101.6%	51.0	5.02	47.0%	52.2	3.54	33.4%
25									
26	47.8	8.83	73.5%	49.8	1.38	12.7%	50.6	0.13	1.3%
27									
28	47.3	6.36	53.0%	49.2	0.03	0.3%	49.8	0.04	0.4%
29									
30	47.0	1.73	11.9%						
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

2008 Legend Lake Dissolved Oxygen and Temperature Data

Skice

Depth	June 10, 2008 - site 4			June 17, 2008 - site 4			June 25, 2008 - site 4		
(ft)	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	69.9	9.29	108.7%	69.1	8.57	95.4%	76.1	8.50	101.4%
1									
2	69.9	9.30	108.6%	69.2	8.37	93.0%	75.4	8.61	100.8%
3									
4	69.8	9.30	108.5%	69.2	8.19	91.6%	74.8	8.44	98.7%
5									
6	69.8	9.29	108.3%	69.1	8.08	90.6%	74.6	8.46	98.8%
7									
8	69.7	9.30	108.4%	69.1	8.10	90.5%	74.4	8.14	97.3%
9									
10	69.7	9.29	108.1%	69.0	8.24	90.6%	73.4	8.37	97.2%
11									
12	69.6	9.20	106.8%	68.8	8.12	90.2%	73.0	8.10	93.4%
13									
14	69.0	8.21	93.4%	68.4	8.10	89.5%	72.5	8.13	94.2%
15									
16	65.6	7.62	84.8%	68.3	8.08	8.9%	71.5	7.75	87.4%
17									
18	62.7	6.86	73.8%	63.1	4.92	50.1%	68.9	7.03	78.3%
19									
20	58.9	6.71	68.8%	60.8	4.62	46.1%	63.2	4.40	44.9%
21									
22	54.7	5.66	55.6%	56.0	3.24	28.8%	59.0	3.00	28.5%
23									
24	52.3	2.41	22.9%	54.0	1.82	16.6%	55.1	0.77	6.2%
25									
26	51.0	0.20	1.9%	52.3	0.54	4.5%	53.3	0.32	2.8%
27									
28	50.2	0.01	0.1%	51.3	0.23	1.8%			
29									
30				50.4	0.15	1.3%			
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

2008 Legend Lake Dissolved Oxygen and Temperature Data

Skice

Depth	July 3, 2008 - Site 4			August 7, 2008 - Site 4			September 3, 2008 - Site 4		
(ft)	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	76.4	8.60	104.7%	78.8	7.97	97.9%	75.2	8.14	96.8%
1									
2	76.3	8.33	99.9%	78.8	7.06	87.8%	75.6	7.64	91.2%
3									
4	76.2	8.37	99.4%	78.7	7.29	89.7%	75.5	7.67	91.9%
5									
6	76.0	8.50	101.5%	78.6	7.24	87.8%	75.5	7.68	91.3%
7									
8	75.6	8.73	104.4%	78.5	6.87	83.8%	75.4	7.40	88.0%
9									
10	75.5	9.05	108.2%	78.3	7.23	88.4%	75.3	7.18	85.4%
11									
12	75.1	8.18	96.8%	78.2	7.30	89.3%	74.4	6.83	80.3%
13									
14	74.4	7.96	93.6%	78.1	7.20	88.4%	73.6	6.64	77.5%
15									
16	71.3	6.25	70.7%	77.0	4.97	59.1%	72.9	6.06	70.1%
17									
18	68.5	5.75	63.7%	74.2	2.59	30.7%	72.0	4.53	51.6%
19									
20	63.4	3.36	37.0%	69.3	0.36	4.1%	70.7	2.69	30.2%
21									
22	57.0	1.63	15.7%	64.1	0.23	2.2%	67.0	0.38	3.7%
23									
24	55.5	0.49	5.1%	60.6	0.13	1.3%	62.7	0.17	1.8%
25									
26	53.9	0.31	2.8%	57.0	0.13	1.6%	59.5	0.13	1.3%
27									
28	52.3	0.10	1.0%	55.3	0.12	1.1%			
29									
30				54.3	0.13	1.3%			
31									
32				54.2	0.10	0.9%			
33									
34									
35									
36									
37									
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2008 Legend Lake Dissolved Oxygen and Temperature Data

Main Channel

highlighted values indicate epilimnetic oygen depletion; red lines indicate depth of stratification

Depth	May 7, 2007 - site 5 (deep)			May 30, 2008 - site 5 (deep)			June 5, 2008 - site 5		
(ft)	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	59.2	11.26	111.9%	65.6	9.41	105.4%	64.7	9.03	99.5%
1									
2	58.8	10.69	105.4%	65.3	9.46	105.6%	64.7	8.96	98.8%
3									
4	57.8	11.25	109.7%	64.6	9.55	105.7%	64.6	8.98	99.0%
5									
6	55.9	11.75	111.0%	64.4	9.55	105.4%	64.5	8.73	95.9%
7									
8	55.4	11.74	112.2%	64.1	9.19	101.1%	64.4	8.03	88.3%
9									
10									
11									
12									
13									
14									
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2008 Legend Lake Dissolved Oxygen and Temperature Data

Main Channel

Depth (ft)	June 10, 2008 - site 5			June 17, 2008 - site 5			June 25, 2008 - site 5		
	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	72.4	9.04	108.5%	70.0	9.27	103.7%	76.5	9.58	115.8%
1									
2	71.9	9.19	109.4%	70.0	8.84	98.8%	76.1	9.71	117.3%
3									
4	71.4	9.33	110.7%	69.5	8.62	95.4%	75.3	10.24	121.5%
5									
6	71.0	6.09	71.4%				74.3	8.76	103.2%
7									
8									
9									
10									
11									
12									
13									
14									
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2008 Legend Lake Dissolved Oxygen and Temperature Data

Main Channel

Depth (ft)	July 3, 2008 - Site 5			July 11, 2008 - Site 5			August 7, 2008 - Site 5		
	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	76.1	8.60	99.0%	77.3	7.93	96.9%	77.9	8.24	99.9%
1									
2	75.8	8.50	102.0%	77.2	7.84	96.4%	77.6	7.91	96.1%
3									
4	75.0	8.95	104.3%	76.9	7.51	92.0%	77.4	8.14	98.8%
5									
6	74.3	8.63	102.2%	76.6	7.27	88.6%	77.4	7.01	84.5%
7									
8	73.8	8.68	100.8%	76.3	5.85	75.2%			
9									
10									
11									
12									
13									
14									
15									
16									
17									
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36									
37									
38									
39									
40									

2008 Legend Lake Dissolved Oxygen and Temperature Data

Main Channel

Depth (ft)	September 3, 2008 - Site 5		
	Temp (ºF)	D.O. (mg/l)	% Sat.
0	74.7	8.16	96.2%
1			
2	74.8	7.88	93.2%
3			
4	74.7	7.79	91.4%
5			
6	74.7	7.83	92.8%
7			
8			
9			
10			
11			
12			
13			
14			
15			
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39			
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2008 Legend Lake Dissolved Oxygen and Temperature Data

Spring *highlighted values indicate epilimnetic oygen depletion; red lines indicate depth of stratification*

Depth	May 7, 2008 - site 6 (deep)			May 30, 2008 - site 6 (deep)			June 5, 2008 - site 6		
(ft)	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	57.8	11.10	108.0%	65.0	9.87	109.8%	64.4	9.23	101.4%
1									
2	57.8	10.82	106.2%	64.8	9.91	110.0%	64.5	9.16	100.7%
3									
4	57.8	10.96	107.1%	64.4	10.1	111.1%	64.5	9.10	100.1%
5									
6	57.7	10.71	104.5%	64.1	9.93	109.3%	64.5	9.05	99.5%
7									
8	57.4	10.75	103.4%	63.9	9.78	107.4%	64.5	9.01	99.0%
9									
10	53.2	10.72	98.5%	63.3	9.18	100.1%	64.5	9.01	99.1%
11									
12	52.3	10.83	97.7%	62.7	8.90	96.4%	64.3	8.77	96.2%
13									
14	51.8	10.59	95.7%	59.7	7.87	83.3%	60.9	7.20	75.9%
15									
16	51.3	10.48	94.1%	54.4	6.74	65.9%	56.8	6.48	65.2%
17									
18	49.3	8.95	77.3%	50.0	3.31	30.6%	52.0	3.59	33.7%
19									
20	49.2	9.03	82.4%	47.5	0.55	4.9%	47.8	0.16	1.5%
21									
22	45.3	1.23	8.2%	45.5	0.08	0.7%	46.0	0.04	0.4%
23									
24	42.0	0.24	1.8%						
25									
26	41.0	0.15	1.1%						
27									
28	41.0	0.11	0.9%						
29									
30	40.7	0.10	0.8%						
31									
32	40.5	0.10	0.8%						
33									
34	40.3	0.09	0.7%						
35									
36	40.3	0.08	0.7%						
37									
38									
39									
40									
41									
42									
43									
44									
45									
46									
47									
48									
49									
50									

2008 Legend Lake Dissolved Oxygen and Temperature Data

Spring

Depth	June 10, 2008 - site 6			June 17, 2008 - site 6			June 25, 2008 - site 6		
(ft)	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	71.4	9.07	107.6%	69.0	8.35	92.8%	76.8	9.01	108.4%
1									
2	71.3	9.08	107.5%	69.0	8.34	92.6%	75.2	9.05	107.0%
3									
4	71.0	9.14	107.9%	69.0	8.33	92.2%	74.4	9.15	106.7%
5									
6	70.9	9.13	107.6%	69.0	8.38	93.2%	73.6	9.34	109.5%
7									
8	69.5	8.16	94.1%	69.0	8.29	91.9%	72.5	9.37	106.5%
9									
10	66.4	7.44	83.6%	69.0	8.37	93.4%	70.6	7.62	86.1%
11									
12	64.9	7.12	78.8%	69.0	8.33	92.4%	68.2	6.66	73.2%
13									
14	61.9	6	64.0%	65.0	5.64	57.6%	69.5	5.53	58.6%
15									
16	56.6	5.22	52.1%	57.2	4.12	38.9%	58.9	4.44	43.8%
17									
18	50.5	0.65	6.1%	51.3	0.66	5.4%	52.8	1.33	11.7%
19									
20	47.7	0.8	2.4%	47.8	0.33	2.8%	50.2	0.59	5.2%
21									
22	45.7	0.16	1.4%	46.3	0.30	2.5%	47.6	0.33	2.7%
23									
24				44.0	0.14	1.1%	45.5	0.24	1.9%
25									
26				43.0	0.13	1.1%	44.1	0.16	1.2%
27									
28				42.2	0.13	1.0%	43.0	0.15	1.2%
29									
30				41.8	0.12	1.0%	42.4	0.14	1.2%
31									
32				41.5	0.12	0.9%	41.9	0.15	1.2%
33									
34				41.3	0.13	0.9%	41.4	0.13	1.0%
35									
36							41.3	0.12	1.0%
37									
38							41.1	0.12	1.1%
39									
40							41.1	0.12	1.0%
41									
42									
43									
44									
45									
46									
47									
48									
49									
50									

2008 Legend Lake Dissolved Oxygen and Temperature Data

Spring

Depth	July 3, 2008 - Site 6			July 11, 2008 - Site 6			August 7, 2008 - Site 6		
(ft)	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	74.9	8.40	99.3%	76.1	8.05	98.5%	77.5	7.53	91.8%
1									
2	74.9	8.39	99.2%	76.3	8.09	96.5%	77.5	7.38	89.6%
3									
4	74.9	8.38	94.1%	76.3	7.80	94.2%	77.4	6.94	85.5%
5									
6	74.6	8.25	97.0%	76.2	7.85	94.0%	77.4	6.89	83.7%
7									
8	74.1	8.41	98.8%	76.2	7.42	89.4%	77.3	7.00	84.9%
9									
10	73.1	7.32	84.8%	75.1	5.44	65.7%	77.2	7.26	88.6%
11									
12	70.2	6.13	69.1%	75.1	5.59	65.2%	74.5	2.85	35.2%
13									
14	65.8	5.80	62.3%	70.7	5.74	64.0%	69.5	2.77	30.6%
15									
16	58.7	3.80	35.5%	67.1	5.11	57.2%	64.5	1.93	20.5%
17									
18	53.7	1.47	14.1%	61.1	4.11	41.4%	59.5	0.47	4.4%
19									
20	50.6	0.43	4.1%	51.0	0.23	2.2%	54.7	0.23	2.2%
21									
22	48.5	0.30	2.5%	58.4	0.15	1.3%	51.1	0.15	1.3%
23									
24	45.7	0.21	2.0%	46.4	0.10	1.0%	47.3	0.14	1.1%
25									
26	43.5	0.11	0.9%	44.6	0.09	0.8%	45.3	0.14	1.2%
27									
28	42.7	0.09	0.8%	43.6	0.11	0.8%	44.6	0.13	1.1%
29									
30	42.1	0.09	0.7%	42.8	0.09	0.8%	43.6	0.12	1.0%
31									
32	41.7	0.09	0.7%	42.5	0.10	0.7%	42.9	0.13	0.9%
33									
34	41.5	0.09	0.7%	42.0	0.09	0.7%	42.6	0.11	0.8%
35									
36	41.3	0.09	0.7%	41.8	0.09	0.7%	42.7	0.11	0.9%
37									
38	41.2	0.09	0.7%	41.5	0.08	0.6%	42.8	0.10	0.9%
39									
40	41.1	0.08	0.7%	41.3	0.08	0.6%	42.6	0.10	0.8%
41									
42									
43									
44									
45									
46									
47									
48									
49									
50									

2008 Legend Lake Dissolved Oxygen and Temperature Data

Spring

Depth (ft)	September 3, 2008 - Site 6		
	Temp (ºF)	D.O. (mg/l)	% Sat.
0	74.8	7.69	90.7%
1			
2	74.9	7.42	88.0%
3			
4	74.9	7.04	83.5%
5			
6	74.9	7.27	86.3%
7			
8	74.9	7.04	83.5%
9			
10	74.8	7.05	83.2%
11			
12	72.2	5.72	65.5%
13			
14	70.1	4.50	50.3%
15			
16	66.3	4.91	52.8%
17			
18	61.4	5.52	56.6%
19			
20	56.1	1.57	14.3%
21			
22	52.1	0.42	3.6%
23			
24	48.7	0.22	1.9%
25			
26	46.4	0.17	1.4%
27			
28	45.0	0.16	1.3%
29			
30	44.0	0.13	1.0%
31			
32	43.3	0.13	1.0%
33			
34	43.1	0.13	1.0%
35			
36	43.2	0.12	0.9%
37			
38			
39			
40			
41			
42			
43			
44			
45			
46			
47			
48			
49			
50			

2008 Legend Lake Dissolved Oxygen and Temperature Data

Peshtigo *highlighted values indicate epilimnetic oygen depletion; red lines indicate depth of stratification*

Depth (ft)	May 7, 2008 - site 7 (deep)			May 30, 2008 - site 7 (deep)			June 5, 2008 - site 7		
	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	58.4	10.90	106.8%	64.8	9.96	110.4%	64.3	9.51	104.3%
1									
2	58.1	10.52	102.7%	64.7	9.96	110.3%	64.4	9.50	104.4%
3									
4	58.1	10.54	103.2%	64.1	9.96	109.5%	64.4	9.50	104.4%
5									
6	58.0	10.58	103.6%	63.8	9.87	108.2%	64.4	9.49	104.3%
7									
8	57.9	10.48	102.4%	63.5	9.66	105.5%	64.4	9.48	104.1%
9									
10	57.9	10.47	102.8%	62.9	9.39	101.8%	64.4	9.47	103.9%
11									
12	53.7	10.21	93.5%	61.8	8.90	95.2%	62.7	8.14	87.2%
13									
14	50.8	9.82	88.1%	57.1	7.52	76.2%	57.8	7.42	75.6%
15									
16	49.1	8.46	73.8%	51.7	6.35	60.1%	52.1	6.18	58.5%
17									
18	47.6	6.74	56.4%	47.3	1.44	12.8%	47.2	1.43	13.1%
19									
20	43.0	1.44	7.8%	44.2	0.46	4.1%	44.7	0.34	2.8%
21									
22	41.2	0.31	2.2%	42.6	0.21	1.8%	42.7	0.06	0.5%
23									
24	40.9	0.23	1.8%	42.0	0.08	0.7%			
25									
26	40.9	0.17	1.4%						
27									
28	40.8	0.16	1.2%						
29									
30	40.8	0.15	1.2%						
31									
32	40.8	0.14	1.0%						
33									
34	40.9	0.13	1.0%						
35									
36	40.0	0.10	0.9%						
37									
38									
39									
40									
41									
42									
43									
44									
45									
46									
47									
48									
49									
50									

2008 Legend Lake Dissolved Oxygen and Temperature Data

Peshtigo

Depth (ft)	June 10, 2008 - site 7			June 17, 2008 - site 7			June 25, 2008 - site 7		
	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	70.7	9.34	109.9%	70.2	8.56	95.7%	76.2	8.57	102.7%
1									
2	70.8	9.31	109.7%	69.8	8.20	89.3%	75.8	8.31	98.5%
3									
4	70.6	9.31	109.6%	69.7	8.05	90.2%	74.7	8.50	100.4%
5									
6	70.7	9.31	109.5%	69.7	8.18	91.4%	73.4	8.33	97.2%
7									
8	67.4	8.27	93.8%	69.7	7.84	87.8%	71.6	7.93	90.2%
9									
10	66.0	8.14	90.9%	69.4	8.18	91.8%	70.0	7.17	80.8%
11									
12	63.5	7.23	78.7%	63.0	5.67	58.4%	66.5	6.44	69.4%
13									
14	58.7	6.57	67.4%	58.3	5.47	53.0%	60.1	5.14	50.8%
15									
16	50.7	2.43	22.5%	53.2	4.14	36.6%	54.8	3.48	30.9%
17									
18	48.1	1.09	9.7%	49.3	1.00	7.8%	48.6	0.55	4.4%
19									
20	45.0	0.13	1.3%	46.4	0.53	4.4%	46.7	0.58	4.9%
21									
22				44.8	0.39	3.1%	45.0	0.40	3.3%
23									
24				42.9	0.37	3.0%	43.3	0.41	3.3%
25									
26				42.3	0.32	2.4%	42.5	0.48	3.8%
27									
28				42.0	0.19	1.4%	41.9	0.23	1.6%
29									
30				41.6	0.13	1.1%	41.5	0.14	1.1%
31									
32				41.4	0.13	1.0%	41.3	0.13	1.0%
33									
34				41.3	0.13	0.9%	41.2	0.12	0.9%
35									
36				41.2	0.12	0.9%	41.2	0.11	0.9%
37									
38							41.1	0.11	0.9%
39									
40							41.1	0.12	1.0%
41									
42									
43									
44									
45									
46									
47									
48									
49									
50									

2008 Legend Lake Dissolved Oxygen and Temperature Data

Peshtigo

Depth (ft)	July 3, 2008 - Site 7			July 11, 2008 - Site 7			August 7, 2008 - Site 7		
	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	74.4	8.47	99.2%	76.6	7.76	94.7%	78.2	7.44	90.4%
1									
2	74.4	8.34	97.3%	76.6	7.76	94.7%	78.2	7.30	89.1%
3									
4	74.4	8.18	95.6%	76.5	7.87	95.0%	78.1	7.01	85.3%
5									
6	74.4	7.81	93.1%	76.5	7.00	85.0%	78.0	6.94	84.5%
7									
8	74.3	8.26	97.5%	76.4	7.00	85.1%	78.0	6.87	84.0%
9									
10	74.0	8.52	99.3%	75.1	5.34	63.2%	77.8	7.08	86.2%
11									
12	66.0	6.40	68.1%	68.7	6.50	71.3%	72.4	4.82	55.5%
13									
14	59.4	5.01	50.8%	63.0	5.63	58.4%	67.3	4.87	53.3%
15									
16	54.6	2.92	28.1%	57.0	4.44	42.7%	60.8	4.41	44.0%
17									
18	50.5	0.46	4.2%	51.7	0.77	7.1%	55.6	2.62	24.7%
19									
20	47.7	0.35	2.8%	47.9	0.26	2.2%	50.6	0.46	4.1%
21									
22	44.5	0.26	2.1%	45.6	0.22	1.9%	47.0	0.28	2.3%
23									
24	43.2	0.22	1.9%	43.5	0.17	1.3%	44.8	0.18	1.5%
25									
26	42.5	0.78	6.2%	42.5	0.44	3.5%	43.8	0.40	3.4%
27									
28	41.8	0.17	1.1%	42.0	0.15	1.2%	43.0	0.17	1.3%
29									
30	41.4	0.11	0.8%	41.4	0.13	1.0%	42.5	0.13	1.0%
31									
32	41.2	0.09	0.7%	41.2	0.11	0.9%	42.0	0.11	0.9%
33									
34	41.1	0.09	0.7%	41.2	0.11	0.9%	41.8	0.11	0.8%
35									
36	41.1	0.09	0.7%	41.1	0.11	0.9%	41.6	0.10	0.8%
37									
38	41.1	0.09	0.7%	41.1	0.11	0.9%	41.5	0.10	0.7%
39									
40	41.1	0.09	0.7%	41.1	0.11	0.9%	41.5	0.09	0.7%
41									
42	41.1	0.09	0.7%	41.1	0.11	0.9%			
43									
44									
45									
46									
47									
48									
49									
50									

2008 Legend Lake Dissolved Oxygen and Temperature Data

Peshtigo

Depth (ft)	September 3, 2008 - Site 7		
	Temp (ºF)	D.O. (mg/l)	% Sat.
0	75.0	7.71	90.8%
1			
2	75.0	7.48	88.6%
3			
4	75.0	7.43	88.1%
5			
6	75.0	7.08	83.6%
7			
8	74.9	7.29	8.6%
9			
10	74.9	7.30	8.7%
11			
12	73.6	6.19	71.8%
13			
14	69.2	6.15	68.5%
15			
16	63.4	6.40	67.1%
17			
18	57.4	7.36	71.4%
19			
20	53.7	4.29	38.8%
21			
22	51.8	0.59	5.5%
23			
24	47.6	0.30	2.4%
25			
26	45.4	0.22	1.8%
27			
28	43.8	0.17	1.4%
29			
30	43.3	0.14	1.1%
31			
32	42.6	0.13	1.1%
33			
34	42.2	0.12	1.0%
35			
36	42.0	0.12	0.9%
37			
38			
39			
40			
41			
42			
43			
44			
45			
46			
47			
48			
49			
50			

2008 Legend Lake Dissolved Oxygen and Temperature Data

Little Blacksmith

highlighted values indicate epilimnetic oygen depletion; red lines indicate depth of stratification

Depth	May 7, 2008 - site 8 (deep)			May 30, 2008 - site 8 (deep)			June 5, 2008 - site 8		
(ft)	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	57.9	11.60	113.0%	65.4	10.0	111.8%	64.8	9.49	104.7%
1									
2	57.8	11.32	110.0%	65.2	10.1	112.0%	64.9	9.47	104.5%
3									
4	57.8	11.07	107.5%	64.8	10.2	112.6%	64.8	9.45	104.3%
5									
6	57.7	11.00	107.1%	64.4	10.2	112.0%	64.8	9.43	104.1%
7									
8	57.6	10.92	106.2%	64.2	10.1	111.5%	64.8	9.38	103.4%
9									
10	57.0	10.90	105.3%	64	9.99	109.7%	64.8	9.29	102.5%
11									
12	56.8	10.91	105.1%	63.9	9.26	101.6%	64.7	9.06	100.0%
13									
14	53.8	10.21	94.2%	63.7	4.78	57.6%	64.0	3.67	40.0%
15									
16	52.1	4.36	18.6%	63.5	0.01	0.1%	63.4	0.02	0.3%
17									
18	52.2	0.34	2.8%						
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

2008 Legend Lake Dissolved Oxygen and Temperature Data

Little Blacksmith

Depth	June 10, 2008 - site 8			June 17, 2008 - site 8			June 25, 2008 - site 8		
(ft)	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	71.4	9.22	109.4%	69.6	8.31	92.7%	76.5	8.74	104.0%
1									
2	71.3	9.21	109.2%	69.6	8.09	90.3%	76.1	8.58	102.9%
3									
4	71.2	9.20	109.0%	69.6	7.95	88.6%	75.2	8.51	99.8%
5									
6	70.3	9.10	106.6%	69.6	8.16	91.5%	74.8	8.10	95.8%
7									
8	68.5	8.64	98.6%	69.5	8.03	89.4%	74.0	9.40	101.8%
9									
10	67.5	4.88	54.4%	69.5	8.01	89.4%	73.1	9.04	103.7%
11									
12	67.5	4.64	52.7%	69.5	7.91	87.6%	71.0	6.78	76.4%
13									
14	67.3	2.66	29.3%	65.8	1.13	11.2%	68.4	2.00	20.9%
15									
16	67.1	2.23	25.1%	64.2	0.66	7.3%	66.0	0.58	5.8%
17									
18	67.0	2.12	23.9%						
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

2008 Legend Lake Dissolved Oxygen and Temperature Data

Little Blacksmith

Depth	July 3, 2008 - Site 8			July 11, 2008 - Site 8			August 7, 2008 - Site 8		
(ft)	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	75.4	8.29	98.6%	76.7	7.58	89.9%	78.6	8.26	93.6%
1									
2	75.3	7.70	92.0%	76.8	7.18	86.9%	78.6	7.38	90.8%
3									
4	75.3	7.80	92.9%	76.8	7.65	90.1%	78.6	7.42	91.5%
5									
6	75.3	7.98	90.3%	76.8	7.22	86.1%	78.5	7.27	89.7%
7									
8	74.6	7.73	90.8%	76.9	7.21	88.1%	78.5	7.24	87.9%
9									
10	74.4	7.80	93.2%	76.9	7.21	88.1%	78.3	7.32	90.3%
11									
12	74.2	7.67	88.4%	74.8	1.85	20.1%	77.8	6.24	74.9%
13									
14	72.9	3.73	43.4%	72.1	0.14	1.7%	76.7	1.27	16.2%
15									
16	69.8	0.92	10.6%	68.9	0.24	2.4%	73.1	0.33	3.3%
17									
18	65.4	0.08	0.9%						
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

2008 Legend Lake Dissolved Oxygen and Temperature Data

Little Blacksmith

Depth (ft)	September 3, 2008 - Site 8		
	Temp (ºF)	D.O. (mg/l)	% Sat.
0	75.6	7.47	87.6%
1			
2	75.5	7.16	85.6%
3			
4	75.5	6.83	81.3%
5			
6	75.5	6.59	77.5%
7			
8	75.4	6.78	79.8%
9			
10	75.3	6.65	79.7%
11			
12	75.3	6.83	81.3%
13			
14	74.3	3.40	39.8%
15			
16	73.6	1.87	2.2%
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			
33			
34			
35			
36			
37			
38			
39			
40			

2008 Legend Lake Dissolved Oxygen and Temperature Data

Big Blacksmith

highlighted values indicate epilimnetic oygen depletion; red lines indicate depth of stratification

Depth	May 7, 2008 - site 9 (deep)			May 30, 2008 - site 9 (deep)			June 5, 2008 - site 9		
(ft)	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	54.5	11.98	112.2%	65.0	10.0	111.5%	64.5	9.62	105.7%
1									
2	54.4	11.87	110.6%	64.3	10.1	111.4%	64.5	9.62	105.8%
3									
4	54.2	11.54	107.8%	63.6	10.1	110.3%	64.5	9.61	105.8%
5									
6	54.1	11.50	106.5%	63.4	10.1	110.5%	64.5	9.59	105.5%
7									
8	54.0	11.46	107.3%	63.3	10.1	110.5%	64.5	9.56	105.1%
9									
10	53.8	11.51	107.0%	62.9	9.80	106.4%	64.50	9.55	105.0%
11									
12	53.6	11.44	106.2%	62.7	9.63	104.3%	64.5	9.5	104.4%
13									
14	53.4	11.47	106.6%	62.6	9.37	101.4%	64.5	9.47	104.0%
15									
16	51.3	11.28	101.7%	62.4	9.36	101.0%	63.5	8.21	89.6%
17									
18	50.3	11.07	97.9%	59.9	8.43	88.4%	60.4	7.82	82.0%
19									
20	49.7	10.65	93.8%	54.8	6.99	68.7%	57.1	6.65	67.0%
21									
22	48.1	9.07	77.9%	50.3	5.26	49.0%	52.8	5.53	52.7%
23									
24	46.4	7.23	60.5%	47.5	4.25	38.3%	48.5	3.46	31.2%
25									
26	45.2	5.44	44.3%	45.6	2.52	21.6%	46.4	2.64	23.1%
27									
28	43.5	3.84	27.6%	44.4	1.38	11.9%	45.2	1.44	12.3%
29									
30	42.2	2.14	16.7%	43.3	0.47	4.0%	44.1	0.41	3.5%
31									
32	41.8	1.80	13.9%	42.5	0.27	2.2%	42.9	0.08	0.5%
33									
34	41.0	1.32	9.7%	41.9	0.10	0.8%			
35									
36	40.7	0.95	7.3%						
37									
38	40.7	1.00	8.8%						
39									
40	40.5	0.82	6.2%						
41									
42	40.3	0.29	1.9%						
43									
44	40.3	0.15	1.2%						
45									
46	40.2	0.13	1.0%						
47									
48	windy								
49									
50	windy								

2008 Legend Lake Dissolved Oxygen and Temperature Data

Big Blacksmith

Depth	June 10, 2008 - site 9			June 17, 2008 - site 9			June 25, 2008 - site 9		
(ft)	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	70.2	9.47	110.8%	69.7	8.44	94.3%	75.3	8.36	99.8%
1									
2	70.1	9.47	110.8%	69.6	8.33	92.7%	75.0	8.04	94.2%
3									
4	70.1	9.46	110.7%	69.2	8.10	90.4%	74.3	8.27	97.6%
5									
6	68.4	8.96	103.0%	69.1	8.17	89.7%	74.0	8.42	97.3%
7									
8	68.0	8.89	101.6%	69.0	7.94	87.9%	73.7	8.43	100.6%
9									
10	67.9	8.90	101.5%	68.6	7.93	87.6%	73.1	8.70	100.1%
11									
12	66.9	8.69	98.0%	68.4	7.83	85.4%	72.4	8.08	91.7%
13									
14	66.1	8.53	95.4%	67.9	7.76	84.8%	71.2	7.89	90.2%
15									
16	64.5	7.86	86.3%	65.6	6.04	63.9%	67.7	6.24	67.8%
17									
18	62.7	7.48	80.4%	63.0	5.69	59.2%	64.5	5.11	54.0%
19									
20	59.4	6.74	69.7%	58.3	5.21	50.4%	57.9	3.60	35.0%
21									
22	53.1	5.18	49.3%	55.0	4.25	40.6%	54.7	3.04	28.8%
23									
24	48.8	3.51	31.8%	51.0	2.96	25.1%	52.0	2.27	20.5%
25									
26	46.6	2.28	20.0%	47.6	1.22	9.8%	48.8	0.79	7.0%
27									
28	45.3	0.99	8.4%	45.2	0.46	3.2%	46.6	0.40	3.2%
29									
30	44.1	0.30	2.5%	44.0	0.20	1.7%	44.9	0.24	2.0%
31									
32				43.1	0.16	1.2%	44.0	0.20	1.5%
33									
34				42.1	0.13	1.0%	42.9	0.16	1.2%
35									
36				41.5	0.12	1.1%	42.1	0.10	0.9%
37									
38				41.1	0.11	0.9%	41.7	0.10	0.8%
39									
40				40.8	0.11	0.9%	41.3	0.09	0.7%
41									
42				40.5	0.11	0.8%	41.0	0.09	0.7%
43									
44				40.5	0.10	0.8%	40.8	0.09	0.7%
45									
46				40.4	0.11	0.8%	40.7	0.09	0.7%
47									
48				40.3	0.09	0.8%	40.6	0.09	0.7%
49									
50				40.4	0.09	0.7%	40.6	0.08	0.6%

2008 Legend Lake Dissolved Oxygen and Temperature Data

Big Blacksmith

Depth	July 3, 2008 - Site 9			July 11, 2008 - Site 9			August 7, 2008 - Site 9		
(ft)	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	74.5	8.64	100.1%	76.1	7.73	87.8%	78.5	7.51	92.7%
1									
2	74.5	8.20	98.3%	76.2	7.64	91.6%	78.6	7.34	90.8%
3									
4	74.5	8.35	96.5%	76.2	7.50	90.6%	78.5	7.04	87.7%
5									
6	74.4	8.02	94.3%	76.2	7.73	93.0%	78.4	7.22	91.6%
7									
8	74.4	8.28	98.2%	76.2	7.64	91.4%	78.3	7.28	91.5%
9									
10	74.4	8.38	98.8%	76.2	7.69	93.0%	78.2	7.45	91.3%
11									
12	74.3	8.17	95.4%	76.2	7.64	91.9%	78.0	7.02	84.1%
13									
14	74.2	8.25	96.6%	76.2	7.56	90.1%	77.2	6.01	72.3%
15									
16	70.7	5.91	67.7%	69.8	4.96	55.3%	74.5	4.43	51.8%
17									
18	64.7	4.48	47.0%	65.8	4.03	43.4%	70.3	2.91	33.1%
19									
20	61.0	3.83	38.6%	61.5	3.16	32.3%	63.4	1.27	12.5%
21									
22	54.8	2.48	23.0%	57.3	2.67	26.2%	57.5	0.39	4.0%
23									
24	50.9	0.41	3.6%	53.2	0.61	5.9%	53.0	0.31	2.8%
25									
26	48.6	0.31	2.8%	50.1	0.32	2.9%	49.7	0.20	1.6%
27									
28	46.6	0.23	2.2%	47.2	0.25	2.0%	47.9	0.13	1.2%
29									
30	45.2	0.16	1.8%	44.4	0.19	1.6%	46.0	0.12	0.9%
31									
32	44.9	0.12	0.9%	43.5	0.19	1.6%	44.7	0.10	0.9%
33									
34	44.9	0.11	0.9%	42.9	0.17	1.4%	43.5	0.10	0.8%
35									
36				42.2	0.17	1.4%	42.8	0.10	0.8%
37									
38				41.8	0.17	1.3%	42.3	0.09	0.7%
39									
40				41.3	0.16	1.3%	41.8	0.09	0.7%
41									
42				41.0	0.16	1.3%	41.3	0.09	0.7%
43									
44				40.8	0.16	1.2%	41.1	0.09	0.6%
45									
46				40.6	0.16	1.2%	40.7	0.08	0.6%
47									
48							40.6	0.08	0.6%
49									
50							40.6	0.07	0.5%

2008 Legend Lake Dissolved Oxygen and Temperature Data

Big Blacksmith

Depth (ft)	September 3, 2008 - Site 9		
	Temp (ºF)	D.O. (mg/l)	% Sat.
0	75.4	7.82	93.2%
1			
2	75.4	7.59	90.7%
3			
4	75.3	7.67	91.0%
5			
6	75.3	7.60	90.3%
7			
8	75.1	7.78	92.5%
9			
10	75.0	7.81	92.7%
11			
12	74.9	7.72	91.3%
13			
14	73.7	7.37	85.9%
15			
16	72.9	6.82	78.4%
17			
18	71.0	4.66	52.5%
19			
20	70.7	4.50	51.0%
21			
22	60.7	0.47	5.0%
23			
24	56.6	0.28	2.5%
25			
26	53.1	0.23	2.2%
27			
28	50.5	0.16	1.4%
29			
30	46.4	0.13	1.1%
31			
32	44.7	0.12	1.0%
33			
34	44.0	0.12	0.9%
35			
36	43.0	0.10	0.9%
37			
38	42.2	0.11	0.9%
39			
40	41.6	0.11	0.8%
41			
42	41.3	0.11	0.9%
43			
44	41.1	0.09	0.7%
45			
46	40.9	0.10	0.8%
47			
48	40.7	0.10	0.8%
49			
50	40.6	0.11	0.8%

2008 Legend Lake Dissolved Oxygen and Temperature Data

Sapokesick *highlighted values indicate epilimnetic oygen depletion; red lines indicate depth of stratification*

Depth (ft)	May 7, 2008 - site 10 (NW channel)			May 7, 2008 - site 11 (deep)			May 7, 2008 - site 12 (NE bay)		
	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	60.7	9.98	101.1%	56.7	11.54	111.0%	57.6	11.17	107.6%
1									
2	60.5	9.88	100.0%	56.7	11.23	108.1%	57.8	10.90	106.3%
3									
4	58.9	10.01	98.1%	56.7	11.03	105.8%	56.7	10.98	105.5%
5									
6	54.1	10.54	97.5%	56.7	11.04	106.7%	54.7	11.13	103.6%
7									
8	52.3	9.51	85.4%	56.2	11.07	105.9%	54.6	9.95	92.2%
9									
10	49.8	2.26	18.4%	55.8	11.15	106.2%			
11									
12				55.2	10.88	103.2%			
13									
14				54.7	10.78	101.3%			
15									
16				50.1	11.32	100.3%			
17									
18				49.6	10.86	95.1%			
19									
20				49.3	10.65	93.2%			
21									
22				48.8	10.09	87.5%			
23									
24				48.3	9.50	81.5%			
25									
26				45.9	1.96	15.8%			
27									
28				43.1	0.28	2.0%			
29									
30				41.9	0.17	1.3%			
31									
32				41.6	0.15	1.1%			
33									
34				41.6	0.13	1.0%			
35									
36									
37									
38									
39									
40									

2008 Legend Lake Dissolved Oxygen and Temperature Data

Sapokesick

Depth	May 7, 2008 - site 13 (south bay)			May 30, 2008 - site 10 (NW channel)			May 30, 2008 - site 11 (deep)		
(ft)	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	57.9	11.33	110.7%	65.8	8.90	99.2%	64.9	9.34	103.7%
1									
2	56.6	11.28	108.9%	64.6	8.78	97.4%	64.8	9.39	104.1%
3									
4	54.6	11.54	107.3%	64.2	8.74	96.2%	63.2	9.57	104.2%
5									
6	53.3	11.75	107.6%	63.2	8.06	88.1%	63.0	9.56	103.9%
7									
8	52.5	12.00	109.9%	59.0	4.34	44.7%	62.9	9.38	101.7%
9									
10	52.4	11.43	103.7%	53.9	0.74	7.5%	62.2	5.47	53.3%
11									
12							61.5	1.42	15.7%
13									
14							61.4	1.20	12.5%
15									
16							61.3	1.14	12.2%
17									
18							61.2	1.11	11.8%
19									
20							61.2	1.07	11.4%
21									
22							61.1	1.03	11.0%
23									
24							61.1	1.00	10.6%
25									
26							61.1	0.95	10.1%
27									
28							61.1	0.89	9.5%
29									
30							61.1	0.84	8.9%
31									
32							61.1	0.79	8.4%
33									
34							61.0	0.75	8.0%
35									
36									
37									
38									
39									
40									

2008 Legend Lake Dissolved Oxygen and Temperature Data

Sapokesick

Depth	May 30, 2008 - site 12 (NE bay)			May 30, 2008 - site 13 (south bay)			June 5, 2008 - site 10		
(ft)	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	66.6	8.70	98.6%	64.7	9.54	105.8%	64.0	8.39	91.7%
1									
2	65.4	8.70	97.3%	63.3	9.49	103.7%	64.0	8.36	91.3%
3									
4	64.4	8.03	88.6%	62.9	9.52	103.4%	63.8	8.18	89.2%
5									
6	63.2	6.53	71.2%	62.7	9.61	104.4%	63.2	6.61	71.2%
7									
8	61.7	1.35	25.1%	62.5	9.62	104.1%	59.1	1.88	19.4%
9									
10				62.4	9.01	97.3%	56.4	0.25	2.6%
11									
12				62.3	4.78	51.6%	56.2	0.16	1.5%
13									
14							56.1	0.12	1.2%
15									
16							55.9	0.09	0.9%
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

2008 Legend Lake Dissolved Oxygen and Temperature Data

Sapokesick

Depth (ft)	June 5, 2008 - site 11			June 5, 2008 - site 12			June 5, 2008 - site 13		
	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	64.4	9.26	101.7%	64.0	8.51	93.0%	64.8	8.94	98.7%
1									
2	63.3	9.25	101.5%	64.0	8.63	94.4%	64.6	8.81	97.0%
3									
4	63.3	9.26	101.6%	63.6	7.84	85.4%	64.3	8.50	93.3%
5									
6	63.3	9.26	101.6%	62.7	5.16	53.9%	64.2	8.19	89.7%
7									
8	63.3	9.26	101.6%	61.7	1.24	12.6%	64.0	4.48	49.3%
9									
10	63.2	9.23	101.2%				63.7	1.96	21.8%
11									
12	63.2	9.22	101.1%				63.5	1.71	18.4%
13									
14	63.1	9.08	99.3%						
15									
16	61.5	5.92	62.9						
17									
18	57.5	5.18	52.5						
19									
20	52.9	3.24	30.9						
21									
22	50.0	0.09	0.9						
23									
24	48.1	0.02	0.1						
25									
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

2008 Legend Lake Dissolved Oxygen and Temperature Data

Sapokesick

Depth (ft)	June 10, 2008 - site 10			June 10, 2008 - site 11			June 10, 2008 - site 12		
	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	72.3	8.44	101.0%	70.1	9.18	107.2%	70.7	8.26	97.3%
1									
2	71.6	8.33	99.1%	69.9	9.19	107.1%	70.2	8.06	94.4%
3									
4	70.0	8.46	98.8%	69.8	9.20	107.0%	69.6	8.94	104.0%
5									
6	67.2	6.02	68.1%	69.6	9.21	107.0%	68.1	4.48	51.2%
7									
8	61.6	1.87	19.8%	69.5	9.19	106.6%	65.7	1.38	15.3%
9									
10	56.4	0.35	3.5%	66.5	7.46	83.7%			
11									
12	54.6	0.08	0.7%	65.8	7.47	83.2%			
13									
14				64.6	2.10	25.4%			
15									
16				62.1	2.41	25.9%			
17									
18				57.9	3.14	31.9%			
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

2008 Legend Lake Dissolved Oxygen and Temperature Data

Sapokesick

Depth	June 10, 2008 - site 13			June 17, 2008 - site 10			June 17, 2008 - site 11		
(ft)	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	68.5	9.17	105.5%	70.4	7.15	80.5%	68.6	7.93	87.5%
1									
2	68.6	9.04	104.1%	70.2	7.13	81.3%	68.5	7.67	85.0%
3									
4	68.2	9.03	103.5%	68.6	7.07	77.4%	68.5	7.81	86.0%
5									
6	67.8	8.52	97.2%	67.8	6.29	69.4%	68.5	7.68	84.7%
7									
8	66.5	4.98	54.6%	62.4	1.51	15.2%	68.5	7.54	83.1%
9									
10	64.6	0.91	11.8%				68.5	7.63	83.7%
11									
12	63.7	0.12	1.4%				68.4	7.73	85.3%
13									
14							68.4	7.57	83.7%
15									
16							64.4	1.11	10.5%
17									
18							59.1	1.98	19.7%
19									
20							56.8	1.00	7.7%
21									
22							53.0	0.33	2.7%
23									
24							49.3	0.34	3.2%
25									
26							46.3	0.15	1.3%
27									
28							45.1	0.13	1.0%
29									
30							44.5	0.13	1.0%
31									
32							43.6	0.12	1.0%
33									
34							43.3	0.12	0.9%
35									
36							43.0	0.11	0.9%
37									
38									
39									
40									

2008 Legend Lake Dissolved Oxygen and Temperature Data

Sapokesick

Depth	June 17, 2008 - site 12			June 17, 2008 - site 13			June 25, 2008 - site 10		
(ft)	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	69.8	7.37	82.4%	70.5	7.56	85.9%	76.9	7.74	92.2%
1									
2	69.8	7.23	79.9%	70.1	7.64	89.1%	76.2	7.81	91.3%
3									
4	68.7	7.33	81.5%	69.0	7.58	83.4%	73.1	7.46	86.7%
5									
6	68.3	7.41	81.8%	68.7	7.64	84.3%	69.6	7.09	79.5%
7									
8				68.4	7.14	77.5%	62.2	2.53	26.5%
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

2008 Legend Lake Dissolved Oxygen and Temperature Data

Sapokesick

Depth	June 25, 2008 -site 11			June 25, 2008 - site 12			June 25, 2008 - site 13		
(ft)	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	75.1	8.26	98.2%	79.0	7.39	91.1%	76.4	7.99	94.6%
1									
2	74.6	8.13	95.5%	78.0	7.18	87.9%	74.3	7.94	93.6%
3									
4	74.0	7.93	94.3%	75.4	6.99	82.3%	73.7	8.10	94.4%
5									
6	73.2	7.90	91.7%	72.1	6.23	75.8%	73.2	7.66	89.2%
7									
8	72.4	7.95	91.5%				72.8	7.31	85.0%
9									
10	71.6	8.02	92.2%						
11									
12	70.9	7.53	84.6%						
13									
14	69.4	5.96	66.5%						
15									
16	66.3	1.62	17.0%						
17									
18	61.8	0.40	3.9%						
19									
20	55.2	0.29	2.8%						
21									
22	52.3	0.21	1.9%						
23									
24	49.7	0.13	1.2%						
25									
26	47.1	0.11	1.0%						
27									
28	45.5	0.11	0.9%						
29									
30	44.4	0.10	0.8%						
31									
32	43.6	0.10	0.9%						
33									
34	43.4	0.10	0.8%						
35									
36	43.3	0.10	0.8%						
37									
38									
39									
40									

2008 Legend Lake Dissolved Oxygen and Temperature Data

Sapokesick

Depth	July 3, 2008 - Site 10			July 3, 2008 - Site 11			July 3, 2008 - Site 12		
(ft)	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	73.9	7.60	87.7%	72.9	7.98	93.8%	73.0	7.64	89.3%
1									
2	73.7	7.85	90.2%	72.9	7.81	90.7%	73.0	7.55	88.0%
3									
4	73.1	7.30	87.0%	72.9	7.63	89.6%	72.4	7.33	84.0%
5									
6	72.2	7.35	85.8%	72.9	7.59	87.9%	72.0	7.08	80.7%
7									
8	67.4	5.58	62.7%	72.9	7.66	88.8%			
9									
10				72.9	7.73	90.1%			
11									
12				72.9	7.80	90.5%			
13									
14				70.9	3.76	42.0%			
15									
16				66.1	0.30	3.3%			
17									
18				63.5	0.26	2.7%			
19									
20				57.0	0.36	2.9%			
21									
22				51.8	0.36	2.5%			
23									
24				49.3	0.18	1.7%			
25									
26				46.8	0.16	1.3%			
27									
28				45.2	0.16	1.3%			
29									
30				44.4	0.15	1.3%			
31									
32				44.4	0.15	1.2%			
33									
34									
35									
36									
37									
38									
39									
40									

2008 Legend Lake Dissolved Oxygen and Temperature Data

Sapokesick

Depth (ft)	July 3, 2008 - Site 13			August 7, 2008 - Site 10			August 7, 2008 - Site 11		
	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	73.1	7.92	91.5%	77.4	7.47	91.3%	77.6	7.51	91.4%
1									
2	73.2	7.36	86.3%	77.4	7.18	87.4%	77.6	7.37	89.4%
3									
4	73.0	6.85	79.8%	77.1	7.23	87.4%	77.7	7.28	88.5%
5									
6	72.9	6.83	79.6%	76.7	7.24	86.9%	77.6	7.30	88.8%
7									
8	72.8	6.68	78.2%	76.3	7.03	83.9%	77.6	7.23	87.1%
9									
10	72.7	5.52	66.7%				77.6	7.30	88.7%
11									
12							77.6	7.29	88.9%
13									
14							77.3	6.48	78.4%
15									
16							73.0	1.70	20.6%
17									
18							66.4	0.83	8.8%
19									
20							60.5	0.58	5.9%
21									
22							53.6	0.30	2.5%
23									
24							51.0	0.18	1.7%
25									
26							47.7	0.14	1.2%
27									
28							46.5	0.13	1.0%
29									
30							45.5	0.12	0.9%
31									
32							44.9	0.11	0.9%
33									
34							44.4	0.11	0.8%
35									
36									
37									
38									
39									
40									

2008 Legend Lake Dissolved Oxygen and Temperature Data

Sapokesick

Depth	August 7, 2008 - Site 12			August 7, 2008 - Site 13			September 3, 2008 - Site 10		
(ft)	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	77.5	8.22	97.8%	78.3	8.01	98.0%	75.2	7.64	90.8%
1									
2	77.3	7.48	91.1%	78.4	7.92	97.4%	75.2	7.57	89.9%
3									
4	77.3	7.59	92.2%	78.0	8.05	98.3%	75.1	7.63	90.5%
5									
6	77.0	7.91	96.5%	77.5	8.07	98.0%	74.9	7.93	94.0%
7									
8				77.5	8.15	99.7%	74.4	7.75	89.9%
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

2008 Legend Lake Dissolved Oxygen and Temperature Data

Sapokesick

Depth (ft)	September 3, 2008 - Site 11			September 3, 2008 - Site 12			September 3, 2008 - Site 13		
	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	75.3	7.82	93.0%	76.4	7.97	95.7%	75.7	7.81	92.6%
1									
2	75.3	7.67	91.1%	76.3	7.51	89.9%	75.8	7.48	89.3%
3									
4	75.2	7.44	88.5%	75.2	7.44	88.2%	75.2	8.02	95.4%
5									
6	75.1	7.43	87.6%	75.0	7.07	83.4%	75.1	8.25	97.7%
7									
8	75.1	7.31	86.7%						
9									
10	75.0	7.54	89.6%						
11									
12	74.9	7.43	87.6%						
13									
14	73.5	6.37	75.2%						
15									
16	73.0	6.85	79.5%						
17									
18	69.8	3.08	34.1%						
19									
20	62.7	0.37	3.8%						
21									
22	56.1	0.20	1.9%						
23									
24	52.8	0.44	4.1%						
25									
26	49.6	0.22	2.0%						
27									
28	47.7	0.15	1.2%						
29									
30	45.7	0.11	0.9%						
31									
32	45.0	0.12	0.9%						
33									
34	44.8	0.09	0.8%						
35									
36									
37									
38									
39									
40									

2008 Legend Lake Dissolved Oxygen and Temperature Data

Pywaosit *highlighted values indicate epilimnetic oygen depletion; red lines indicate depth of stratification*

Depth (ft)	May 7, 2008 - site 14 (deep)			May 30, 2008 - site 14 (deep)			June 5, 2008 - site 14		
	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	53.8	12.08	111.2%	63.9	9.49	104.3%	64.8	9.47	104.5%
1									
2	53.7	11.82	109.6%	63.5	9.62	105.2%	64.7	9.49	104.6%
3									
4	53.6	11.68	108.3%	63.4	9.66	105.6%	64.6	9.51	104.7%
5									
6	53.5	11.66	107.9%	63.4	9.66	105.5%	64.5	9.51	104.7%
7									
8	53.1	11.40	105.6%	63.3	9.68	105.5%	64.5	9.49	104.4%
9									
10	52.3	11.37	104.1%	63.1	9.69	105.5%	64.4	9.48	104.1%
11									
12	52.5	11.42	103.9%	63.1	9.69	105.5%	64.4	9.46	104.0%
13									
14	52.4	11.39	104.3%	62.7	9.61	104.1%	64.4	9.47	104.1%
15									
16	52.5	11.41	104.2%	62.5	9.55	103.2%	64.3	9.19	100.8%
17									
18	52.5	11.34	103.4%	62.4	9.49	102.5%	63.9	8.49	92.1%
19									
20	52.5	11.29	103.5%	61.8	9.42	101.0%	63.6	8.50	92.0%
21									
22	52.4	11.34	103.5%	59.2	8.73	90.7%	60.5	8.21	86.1%
23									
24	52.1	11.23	101.4%	57.2	8.20	83.2%	59.1	7.92	81.7%
25									
26	51.2	11.20	100.7%	54.1	7.56	73.8%	55.6	7.31	72.1%
27									
28	50.0	10.95	96.7%	50.4	6.88	64.0%	50.0	6.18	57.0%
29									
30	49.6	10.81	94.6%	48.3	6.15	55.7%	47.3	4.94	43.9%
31									
32	48.2	10.06	85.0%	47.0	5.30	47.2%	45.7	2.96	25.8%
33									
34	45.6	7.04	52.5%	45.1	3.11	27.0%	44.4	0.89	7.7%
35									
36	41.6	2.17	15.0%	44.9	2.77	24.0%	43.6	0.03	0.2%
37									
38	41.1	1.00	7.0%	43.0	0.19	1.5%			
39									
40	40.8	0.63	4.4%						
41									
42	40.7	0.41	3.1%						
43									
44	40.8	0.25	1.5%						
45									
46	41.0	0.14	0.9%						
47									
48	41.1	0.10	80.0%						
49									
50									

2008 Legend Lake Dissolved Oxygen and Temperature Data

Pywaosit

Depth	June 10, 2008 - site 14			June 17, 2008 - site 14			June 25, 2008 - site 14		
(ft)	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	69.6	9.04	105.2%	69.1	8.40	92.8%	75.6	8.15	96.9%
1									
2	69.3	9.12	105.7%	69.0	8.15	89.9%	75.6	8.02	95.4%
3									
4	69.2	9.12	105.6%	69.0	8.19	91.1%	75.0	8.16	97.0%
5									
6	69.0	9.18	106.1%	69.0	8.19	90.8%	74.0	8.25	96.7%
7									
8	68.9	9.19	106.1%	69.0	8.24	91.8%	73.2	8.35	96.9%
9									
10	68.3	9.04	103.8%	68.9	8.11	90.1%	72.2	8.31	95.9%
11									
12	67.5	8.80	100.1%	68.9	7.95	87.7%	71.6	8.24	93.6%
13									
14	66.2	8.41	94.3%	68.7	7.90	87.3%	71.1	7.66	86.3%
15									
16	64.9	7.64	84.4%	68.5	7.91	87.4%	70.4	7.14	80.8%
17									
18	64.2	7.86	86.1%	68.3	7.75	85.2%	69.1	6.48	71.6%
19									
20	63.7	7.79	84.9%	68.3	7.61	84.1%	67.0	5.89	63.8%
21									
22	62.8	7.79	84.0%	63.8	5.59	58.2%	63.9	4.69	49.6%
23									
24	58.5	7.09	72.7%	58.1	5.56	53.1%	61.1	4.34	44.1%
25									
26	55.3	6.71	66.1%	55.1	5.53	51.0%	56.6	4.49	43.2%
27									
28	52.8	6.22	59.3%	51.4	5.27	47.1%	53.0	4.42	39.5%
29									
30	49.0	5.30	48.6%	50.1	5.00	43.8%	49.8	3.77	33.3%
31									
32	47.0	3.66	32.4%	48.7	4.41	38.1%	47.8	2.54	21.3%
33									
34	45.3	2.11	18.2%	47.0	3.73	30.3%	45.5	0.28	2.3%
35									
36	44.1	0.21	1.7%	45.3	1.48	11.1%	44.1	0.17	1.3%
37									
38	43.2	0.02	0.2%	44.4	0.49	4.2%	43.2	0.10	0.8%
39									
40				43.9	0.22	1.4%	42.7	0.09	0.8%
41									
42				43.0	0.12	0.9%	42.2	0.09	0.7%
43									
44				43.2	0.10	0.8%	42.0	0.09	0.7%
45									
46				43.2	0.09	0.7%	41.8	0.09	0.7%
47									
48				43.3	0.09	0.7%	41.5	0.08	0.7%
49									
50				43.3	0.09	0.7%	41.6	0.08	0.7%

2008 Legend Lake Dissolved Oxygen and Temperature Data

Pywaosit

Depth	July 3, 2008 - site 14			August 7, 2008 - Site 14			September 3, 2008 - Site 14		
(ft)	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.	Temp (ºF)	D.O. (mg/l)	% Sat.
0	74.1	8.10	95.0%	78.2	7.68	94.1%	75.1	8.19	97.5%
1									
2	74.3	8.10	95.5%	78.2	7.47	91.9%	75.2	8.13	96.4%
3									
4	74.3	8.06	94.7%	78.2	7.55	91.8%	75.1	7.85	93.0%
5									
6	74.1	7.98	93.8%	78.2	7.47	91.0%	75.0	7.60	90.4%
7									
8	73.9	7.96	93.5%	78.0	7.32	88.8%	74.9	7.68	91.5%
9									
10	73.6	7.94	92.9%	77.9	7.30	89.3%	74.8	7.82	92.6%
11									
12	73.5	7.81	92.0%	77.9	7.29	89.4%	74.8	7.72	91.3%
13									
14	73.5	7.86	91.7%	77.8	7.31	89.5%	74.0	7.52	88.3%
15									
16	73.4	7.81	91.8%	77.8	7.26	89.0%	73.9	7.24	85.0%
17									
18	70.4	6.25	70.3%	77.3	6.72	81.7%	73.3	6.73	78.5%
19									
20	67.6	5.26	56.9%	75.6	4.98	60.1%	72.6	6.45	74.4%
21									
22	67.4	5.18	53.0%	67.2	0.60	7.1%	71.1	5.37	60.4%
23									
24	60.9	3.49	35.6%	62.6	0.33	3.2%	65.3	0.73	8.0%
25									
26	55.5	3.75	35.9%	58.7	0.22	2.2%	59.6	0.32	3.2%
27									
28	55.1	3.51	31.8%	54.7	0.15	1.2%	54.8	0.21	2.1%
29									
30	49.8	3.15	27.5%	51.3	0.10	1.0%	52.7	0.14	1.2%
31									
32	48.8	2.59	22.6%	49.5	0.08	0.7%	51.2	0.12	1.0%
33									
34	46.6	0.36	2.5%	47.6	0.08	0.7%	48.9	0.10	0.9%
35									
36	45.4	0.14	1.2%	46.0	0.08	0.7%	46.5	0.11	0.9%
37									
38	44.2	0.12	1.0%	44.3	0.08	0.7%	44.5	0.11	0.9%
39									
40	43.7	0.12	0.9%	43.9	0.08	0.6%	43.8	0.10	0.8%
41									
42	43.8	0.11	0.9%	43.3	0.08	0.6%	43.4	0.10	0.8%
43									
44				42.9	0.07	0.6%	42.9	0.09	0.7%
45									
46				42.6	0.07	0.6%	42.7	0.09	0.7%
47									
48				42.3	0.07	0.6%	42.8	0.08	0.7%
49									
50				42.1	0.07	0.6%	42.7	0.08	0.7%

Appendix B

Summary of aquatic plant survey data collected in 2007 and 2008 throughout the Legend Lake system, Menominee County, Wisconsin.

Wah-toh-sah / Skice Lakes
and Southern Main Channel

Species common name	scientific name	August, 2007 Percent Frequency	August, 2008 Percent Frequency	Significant Change*
Eurasian watermilfoil	***Myriophyllum spicatum***	42.64	8.60	decrease
Curly-leaf pondweed	*Potamogeton crispus*	--	--	n.s.
Watershield	***Brasenia schreberi***	0.39	--	n.s.
Coontail	***Ceratophyllum demersum***	3.88	3.94	n.s.
Muskgrasses	*Chara*	51.55	58.78	increase
Common waterweed	*Elodea canadensis*	8.14	6.09	n.s.
Water star-grass	*Heteranthera dubia*	1.16	--	n.s.
Forked duckweed	*Lemna trisulca*	--	0.36	n.s.
Water marigold	*Megalodonta beckii*	0.78	0.36	n.s.
Northern water milfoil	***Myriophyllum sibiricum***	17.05	--	decrease
Bushy pondweed	*Najas flexilis*	48.06	51.97	n.s.
Nitella	*Nitella* sp.	--	2.51	increase
Spatterdock	***Nuphar variegata***	1.16	0.36	n.s.
White water lily	***Nymphaea odorata***	0.78	0.72	n.s.
Large-leaf pondweed	*Potamogeton amplifolius*	0.39	0.36	n.s.
Leafy pondweed	*Potamogeton foliosus*	0.78	--	n.s.
Illinois pondweed	*Potamogeton illinoensis*	44.96	25.45	decrease
Floating-leaf pondweed	*Potamogeton natans*	--	--	n.s.
White-stem pondweed	*Potamogeton praelongis*	2.33	2.15	n.s.
Small pondweed	*Potamogeton pusillus*	--	2.15	increase
Clasping-leaf pondweed	*Potamogeton richardsonii*	27.52	25.09	n.s.
Fern Pondweed	*Potamogeton robbinsii*	18.99	22.22	n.s.
Flat-stem pondweed	*Potamogeton zosteriformis*	13.95	13.26	n.s.
Stiff water crowfoot	*Ranunculus aquatilis*	0.39	--	n.s.
Sago pondweed	*Stuckenia pectinata*	16.28	6.09	decrease
Creeping bladderwort	***Utricularia gibba***	--	3.23	increase
Common bladderwort	***Utricularia vulgaris***	--	1.79	n.s.
Wild celery	*Vallisneria americana*	18.60	18.28	n.s.
filamentous algae		8.14	3.23	decrease

* n.s. = not significant

Spring / Main Channel Lakes

and northern Main Channel

Species common name	scientific name	August, 2007 Percent Frequency	August, 2008 Percent Frequency
Eurasian watermilfoil	***Myriophyllum spicatum***	6.36	9.01
Curly-leaf pondweed	*Potamogeton crispus*	--	--
Watershield	***Brasenia schreberi***	0.91	--
Coontail	***Ceratophyllum demersum***	11.82	7.21
Muskgrasses	*Chara*	46.36	61.26
Needle spikerush	*Eleocharis acicularis*	0.91	--
Common waterweed	*Elodea canadensis*	49.09	49.55
Water marigold	*Megalodonta beckii*	0.91	0.90
Bushy pondweed	*Najas flexilis*	32.73	48.65
Nitella	*Nitella* sp.	14.55	0.90
Spatterdock	***Nuphar variegata***	1.82	--
White water lily	***Nymphaea odorata***	1.82	--
Pickerelweed	*Pontederia cordata*	1.82	--
Large-leaf pondweed	*Potamogeton amplifolius*	1.82	2.70
Leafy pondweed	*Potamogeton foliosus*	0.78	--
Illinois pondweed	*Potamogeton illinoensis*	34.55	27.93
White-stem pondweed	*Potamogeton praelongis*	5.45	7.21
Small pondweed	*Potamogeton pusillus*	0.91	9.91
Clasping-leaf pondweed	*Potamogeton richardsonii*	10.91	29.73
Fern Pondweed	*Potamogeton robbinsii*	36.36	32.43
Stiff pondweed	*Potamogeton strictifolius*	0.91	--
Flat-stem pondweed	*Potamogeton zosteriformis*	11.82	27.93
Stiff water crowfoot	*Ranunculus aquatilis*	0.91	--
Sago pondweed	*Stuckenia pectinata*	4.55	25.23
Creeping bladderwort	***Utricularia gibba***	40.91	17.12
Common bladderwort	***Utricularia vulgaris***	40.91	28.83
Wild celery	*Vallisneria americana*	36.36	27.03
filamentous algae		8.18	5.41

Peshtigo Lake

Species common name	scientific name	August, 2007 Percent Frequency	August, 2008 Percent Frequency
Eurasian watermilfoil	***Myriophyllum spicatum***	17.95	16.67
Curly-leaf pondweed	*Potamogeton crispus*	--	--
Watershield	***Brasenia schreberi***	3.85	1.39
Coontail	***Ceratophyllum demersum***	25.64	20.83
Muskgrasses	*Chara*	29.49	30.56
Common waterweed	*Elodea canadensis*	65.38	65.28
Water star-grass	***Heteranthera dubia***	8.97	--
Forked duckweed	*Lemna trisulca*	7.69	--
Water marigold	*Megalodonta beckii*	2.56	6.94
Northern water milfoil	*Myriophyllum sibiricum*	11.54	8.33
Whorled watermilfoil	*Myriophyllum verticullatum*	6.41	
Bushy pondweed	*Najas flexilis*	52.56	52.78
Nitella	*Nitella* sp.	16.67	6.94
Spatterdock	***Nuphar variegata***	5.13	1.39
White water lily	***Nymphaea odorata***	3.85	1.39
Alpine pondweed	*Potamogeton alpinus*	3.85	--
Large-leaf pondweed	*Potamogeton amplifolius*	6.41	8.33
Fies Pondweed	*Potamogeton friesii*	--	5.56
Variable pondweed	*Potamogeton gramineus*	14.10	--
Illinois pondweed	*Potamogeton illinoensis*	19.23	33.33
White-stem pondweed	*Potamogeton praelongis*	--	2.78
Small pondweed	*Potamogeton pusillus*	11.54	30.56
Clasping-leaf pondweed	*Potamogeton richardsonii*	29.49	23.61
Fern Pondweed	*Potamogeton robbinsii*	24.36	18.06
Stiff pondweed	*Potamogeton strictifolius*	3.85	--
Flat-stem pondweed	*Potamogeton zosteriformis*	20.51	38.89
Stiff water crowfoot	*Ranunculus aquatilis*	1.28	--
Sago pondweed	*Stuckenia pectinata*	23.08	18.06
Creeping bladderwort	***Utricularia gibba***	28.21	52.78
Flat-leaf bladderwort	***Utricularia intermedia***	2.56	--
Small bladderwort	***Utricularia minor***	3.85	--
Common bladderwort	***Utricularia vulgaris***	30.77	36.11
Wild celery	*Vallisneria americana*	34.62	15.28
filamentous algae		--	6.94

Little Blacksmith Lake

		August, 2007	August, 2008
Species common name	**scientific name**	**Percent Frequency**	**Percent Frequency**
Eurasian watermilfoil	***Myriophyllum spicatum***	5.26	9.38
Curly-leaf pondweed	*Potamogeton crispus*	--	1.04
Watershield	***Brasenia schreberi***	2.11	2.08
Coontail	***Ceratophyllum demersum***	13.68	3.13
Muskgrasses	*Chara*	44.21	46.88
Common waterweed	*Elodea canadensis*	52.63	42.71
Northern water milfoil	***Myriophyllum sibiricum***	--	2.08
Bushy pondweed	*Najas flexilis*	41.05	56.25
Nitella	*Nitella* sp.	3.16	--
Spatterdock	***Nuphar variegata***	3.16	--
White water lily	***Nymphaea odorata***	2.11	--
Pickerelweed	*Pontederia cordata*	1.05	--
Large-leaf pondweed	*Potamogeton amplifolius*	3.16	1.04
Variable pondweed	*Potamogeton gramineus*	3.16	--
Illinois pondweed	*Potamogeton illinoensis*	34.74	23.96
Floating-leaf pondweed	*Potamogeton natans*	1.05	1.04
White-stem pondweed	*Potamogeton praelongis*	--	12.50
Small pondweed	*Potamogeton pusillus*	1.05	10.42
Clasping-leaf pondweed	*Potamogeton richardsonii*	21.05	26.04
Fern Pondweed	*Potamogeton robbinsii*	33.68	34.38
Flat-stem pondweed	*Potamogeton zosteriformis*	14.74	30.21
Sago pondweed	*Stuckenia pectinata*	7.37	19.79
Creeping bladderwort	***Utricularia gibba***	14.74	21.88
small bladderwort	***Utricularia minor***	1.05	2.08
Common bladderwort	***Utricularia vulgaris***	2.11	1.04
Wild celery	*Vallisneria americana*	42.11	43.75
filamentous algae		--	1.04

Big Blacksmith Lake

Species common name	scientific name	August, 2007 Percent Frequency	August, 2008 Percent Frequency
Eurasian watermilfoil	***Myriophyllum spicatum***	3.29	2.72
Curly-leaf pondweed	*Potamogeton crispus*	--	--
Watershield	***Brasenia schreberi***	2.63	--
Coontail	***Ceratophyllum demersum***	16.45	11.56
Muskgrasses	*Chara*	61.84	66.67
Needle spikerush	*Eleocharis acicularis*	0.66	--
Common waterweed	*Elodea canadensis*	35.53	27.89
Water star-grass	***Heteranthera dubia***	--	0.68
Northern water milfoil	***Myriophyllum sibiricum***	--	2.72
Bushy pondweed	*Najas flexilis*	49.34	62.59
Nitella	*Nitella* sp.	19.74	10.20
Spatterdock	***Nuphar variegata***	0.66	--
White water lily	***Nymphaea odorata***	0.66	0.68
Alpine pondweed	*Potamogeton alpinus*	0.66	--
Large-leaf pondweed	*Potamogeton amplifolius*	1.32	2.72
Leafy pondweed	*Potamogeton foliosus*	1.97	--
Fies Pondweed	*Potamogeton friesii*	--	0.68
Variable pondweed	*Potamogeton gramineus*	1.32	4.08
Illinois pondweed	*Potamogeton illinoensis*	36.32	30.61
Floating-leaf pondweed	*Potamogeton natans*	--	2.72
White-stem pondweed	*Potamogeton praelongis*	--	4.08
Small pondweed	*Potamogeton pusillus*	5.26	19.73
Clasping-leaf pondweed	*Potamogeton richardsonii*	26.97	29.93
Fern Pondweed	*Potamogeton robbinsii*	23.03	29.25
Flat-stem pondweed	*Potamogeton zosteriformis*	14.47	31.97
Sago pondweed	*Stuckenia pectinata*	8.55	12.24
Creeping bladderwort	***Utricularia gibba***	14.47	12.93
Flat-leaf bladderwort	***Utricularia intermedia***	0.66	--
Small bladderwort	***Utricularia minor***	0.66	1.36
Common bladderwort	***Utricularia vulgaris***	9.87	19.73
Wild celery	*Vallisneria americana*	45.39	42.86
Filamentous algae		0.66	2.72
Moss		1.32	--

Sapokesick Lake

Species common name	scientific name	August, 2007 Percent Frequency	August, 2008 Percent Frequency	Significant change*
Eurasian watermilfoil	***Myriophyllum spicatum***	33.33	16.39	decrease
Watershield	***Brasenia schreberi***	3.21	1.64	decrease
Coontail	***Ceratophyllum demersum***	44.98	29.51	decrease
Muskgrasses	*Chara*	16.06	33.20	increase
Needle spikerush	*Eleocharis acicularis*	0.80	--	n.s.
Common waterweed	*Elodea canadensis*	52.21	50.82	n.s.
Water star-grass	*Heteranthera dubia*	--	1.23	n.s.
Forked duckweed	*Lemna trisulca*	--	0.41	n.s.
Northern water milfoil	***Myriophyllum sibiricum***	6.83	2.46	decrease
Bushy pondweed	*Najas flexilis*	53.01	59.02	n.s.
Nitella	*Nitella* sp.	6.02	3.69	n.s.
Spatterdock	***Nuphar variegata***	0.40	1.64	n.s.
White water lily	***Nymphaea odorata***	3.61	1.23	n.s.
water smartweed	*Polygonum amphibium*	0.40	--	n.s.
Pickerelweed	*Pontederia cordata*	0.40	--	n.s.
Large-leaf pondweed	*Potamogeton amplifolius*	2.81	3.28	n.s.
Leafy pondweed	*Potamogeton foliosus*	1.20	--	n.s.
Fries pondweed	*Potamogeton friesii*	0.40	0.41	n.s.
Variable pondweed	*Potamogeton gramineus*	1.61	0.82	n.s.
Illinois pondweed	*Potamogeton illinoensis*	27.71	24.18	n.s.
Floating-leaf pondweed	*Potamogeton natans*	1.61	1.23	n.s.
White-stem pondweed	*Potamogeton praelongis*	2.41	4.10	n.s.
Small pondweed	*Potamogeton pusillus*	13.25	33.61	increase
Clasping-leaf pondweed	*Potamogeton richardsonii*	24.10	32.79	increase
Fern Pondweed	*Potamogeton robbinsii*	28.11	29.51	n.s.
Stiff pondweed	*Potamogeton strictifolius*	1.20	--	n.s.
Flat-stem pondweed	*Potamogeton zosteriformis*	24.10	31.97	increase
Stiff water crowfoot	*Ranunculus aquatilis*	0.80	--	n.s.
Narrow-leaf burreed	*Sparganium angustifolium*	0.40	--	n.s.
Sago pondweed	*Stuckenia pectinata*	8.84	4.92	decrease
Creeping bladderwort	***Utricularia gibba***	23.29	36.89	increase
Small bladderwort	***Utricularia minor***	--	0.41	n.s.
Common bladderwort	***Utricularia vulgaris***	1.61	5.33	increase
Wild celery	*Vallisneria americana*	32.53	34.02	n.s.
Filamentous algae		0.80	5.74	increase

* n.s. = not significant

Pywaosit Lake

Species common name	scientific name	August, 2007 Percent Frequency	August, 2008 Percent Frequency	Significant change*
Eurasian watermilfoil	***Myriophyllum spicatum***	30.30	12.07	decrease
Curly-leaf pondweed	*Potamogeton crispus*	--	3.45	n.s.
Coontail	***Ceratophyllum demersum***	33.33	18.97	decrease
Muskgrasses	*Chara*	30.30	41.38	n.s.
Needle spikerush	*Eleocharis acicularis*	1.52	--	n.s.
Common waterweed	*Elodea canadensis*	31.82	13.79	decrease
Water star-grass	***Heteranthera dubia***	3.03	1.72	n.s.
Water marigold	*Megalodonta beckii*	6.06	3.45	n.s.
Northern water milfoil	***Myriophyllum sibiricum***	18.18	5.17	decrease
Bushy pondweed	*Najas flexilis*	50.00	55.17	n.s.
Nitella	*Nitella* sp.	1.52	1.72	n.s.
White water lily	***Nymphaea odorata***	1.52	1.72	n.s.
Alpine pondweed	*Potamogeton alpinus*	1.52	--	n.s.
Leafy pondweed	*Potamogeton foliosus*	13.64	--	decrease
Fries pondweed	*Potamogeton friesii*	--	1.72	n.s.
Variable pondweed	*Potamogeton gramineus*	6.06	1.72	n.s.
Illinois pondweed	*Potamogeton illinoensis*	34.85	18.97	decrease
White-stem pondweed	*Potamogeton praelongis*	--	5.17	n.s.
Small pondweed	*Potamogeton pusillus*	12.12	24.14	n.s.
Clasping-leaf pondweed	*Potamogeton richardsonii*	31.82	27.59	n.s.
Fern Pondweed	*Potamogeton robbinsii*	28.79	15.52	decrease
Flat-stem pondweed	*Potamogeton zosteriformis*	19.70	10.34	n.s.
Sago pondweed	*Stuckenia pectinata*	7.58	8.62	n.s.
Creeping bladderwort	***Utricularia gibba***	1.52	10.34	increase
Wild celery	*Vallisneria americana*	43.94	50.00	n.s.
Filamentous algae		--	3.45	n.s.
Moss		1.52	--	n.s.

* n.s. = not significant