Ridinger Lake
Aquatic Vegetation Management Plan
2008 Update-Draft
Kosciusko County, Indiana

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Executive Summary

Aquatic Control was contracted by the Ridinger Lake Property Owners Association (RLPOA) to complete aquatic vegetation sampling in order to update the Ridinger Lake Aquatic Vegetation Management Plan 2007-2011 (Aquatic Control 2008). Ridinger Lake is 135 acre natural lake located 5 miles south of North Webster in Kosciusko County, Indiana. Funding for the update of this plan was obtained from the RLPOA and the Indiana Department of Natural Resources-Division of Fish and Wildlife as part of the Lake and River Enhancement program (LARE). The update will serve as a tool to track changes in the vegetation community, to adjust the action plan as needed, and to maintain eligibility for additional LARE funds.

Aquatic vegetation is an important component of Indiana lakes. Aquatic vegetation provides fish habitat, food for wildlife, prevents erosion, and can improve overall water quality. However, as a result of many factors, this vegetation can develop to a nuisance level. Nuisance aquatic vegetation, as used in this paper, describes plant growth that negatively impacts the present uses of the lake including fishing, boating, swimming, aesthetic, and lakefront property values. The primary nuisance species within Ridinger Lake is the invasive plant Eurasian watermilfoil (*Myriophyllum spicatum*). Common coontail (*Ceratophyllum demersum*) is a native species that can also create problems in high-use areas of Ridinger Lake. The invasive species curlyleaf pondweed (*Potamogeton crispus*) and purple loosestrife (*Lythrum salicaria*) was also present at low levels.

In 2007, Eurasian watermilfoil beds were monitored throughout the growing season. Milfoil was found growing in 14.1 acres of the lake at the time of the May 30, 2007 Invasive Species Mapping survey and at 46.0% of the sampling sites of the Tier II survey that was performed on the same date. These areas were treated with Navigate herbicide (active ingredient: 2,4-D) on June 12th. Eurasian watermilfoil was not detected during the post-treatment Tier II survey that took place on July 24, 2007. The distribution maps and data were studied and it was proposed that as much as 14 acres of Eurasian watermilfoil might have to be treated in Ridinger Lake in 2008.

In 2008, RLPOA received an $8,550 grant from LARE in order to carry out additional Eurasian watermilfoil treatments and sampling on Ridinger Lake. On May 28, 2008, a spring invasive species mapping survey was completed to locate beds of invasive plants. The survey revealed that 8.1 acres of Eurasian watermilfoil and 0.9 acres of curlyleaf pondweed were present. On June 6th, 8.1 acres of Eurasian watermilfoil was treated with Navigate herbicide. Milfoil was only collected at a single site during the August 12th Tier II survey. Nine native species were also collected during this survey of which common coontail (*Ceratophyllum demersum*) and slender naiad (*Najas flexillis*) were observed at the highest percent occurrence. The vegetation controls appeared to be effectively controlling milfoil while preserving and enhancing native vegetation diversity and abundance.

In order to continue to meet the goals of this plan, several actions will need to be taken. Detection and control of Eurasian watermilfoil infestations should be the primary action taken in 2009. It is recommended that two vegetation surveys be performed next season.

A spring Invasive Mapping Survey should be completed in mid to late May in order to locate and document the location of Eurasian watermilfoil in Ridinger Lake. If it is detected, it should be treated with 2,4-D aquatic herbicide. A Tier II survey should take place in early to mid August in order to assess the changes in the native plant community and adjust the action plan as needed. In addition to potential milfoil controls, it may be necessary to manage some of the high use areas for nuisance native vegetation, primarily common coontail. This management should be limited to less than 50% of the total shoreline and not exceed 10% of the total surface area of Ridinger Lake. Native vegetation could be further enhanced if the actions, laid out in the 2004 Diagnostic Study, are initiated.

Acknowledgements

Funding for the vegetation sampling and preparation of an aquatic vegetation management plan was provided by the Ridinger Lake Property Owners Association and the Indiana Department of Natural Resources Lake and River Enhancement Program. Aquatic Control, Inc. completed the fieldwork, data processing, and map generation. Special thanks are due to Holly LaSalle and Lyn Crighton from Tippecanoe Environmental Lake and Watershed Foundation (TELWF) and Jill Jordan and Jodi Lozier from the Ridinger Lake Homeowners Association for their help in initiating and completing this project. Special thanks are given to Jed Pearson, Fisheries Biologists for the Indiana Department of Natural Resources-Division of Fish and Wildlife, for his assistance and review of this plan. Special thanks are also given to Gwen White and Angela Sturdevant, Aquatic Biologist from the Lake and River Enhancement Program (LARE) for their review and assistance on this plan. Author of this report is Brendan Hastie of Aquatic Control. The author would like to acknowledge the valuable input from Brian Isaacs, Nathan Long, and Barbie Huber of Aquatic Control for their field assistance, map generation, review, and editing of this report.

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1.0 INTRODUCTION

This report was created in order to update the Ridinger Lake Aquatic Vegetation Management Plan. The plan update was funded by the Indiana Department of Natural Resources Lake and River Enhancement Program (LARE) and the Ridinger Lake Property Owners Association (RLPOA). The update serves as a tool to track changes in the plant community, to adjust the action plan as needed, and to maintain eligibility for additional LARE funds. Major items covered include the 2008 sampling results, a review of the 2008 vegetation controls, and updates to the budget and action plans. Once reviewed and approved, the update should be included in the original vegetation management plan following the reference section and prior to the Appendix.

Ridinger Lake is a 135 acre natural lake that is located in Kosciusko County, Indiana. Ridinger Lake has a maximum depth of approximately 42 feet and an average depth of 19 feet. Ridinger Lake's shoreline is moderately developed compared to other northern Indiana Lakes. Jellystone Park, a large campground with a maximum capacity of 1200 campsites, is located along the western shoreline of the lake. This park also maintains a beach, boat rental, and private boat ramp along the western shore. In addition to the campground, approximately 120 homes ring the shoreline of the lake. Wetland areas are located in the southwest, southeast, and northwest corners of the lake.

2.0 PROBLEM STATEMENT

Aquatic vegetation is an important component of lakes in Indiana. However, as a result of many factors, this vegetation can develop to a nuisance level. Nuisance aquatic vegetation, as used in this paper, describes plant growth that negatively impacts the present uses of the lake including fishing, boating, swimming, aesthetic, and lakefront property values. The primary nuisance species within Ridinger Lake is the invasive species Eurasian watermilfoil. Purple loosestrife is an invasive emergent species that was also detected in previous sampling. This species will not likely create nuisance conditions for lake users, but could have negative impacts on native wetland species in and around Ridinger Lake. Dense beds of common coontail also form in shallow areas of Ridinger Lake and have the potential to impact boating and other recreational activities.

3.0 2008 PLANT SAMPLING RESULTS

Two plant surveys were completed in 2008. A spring invasive species mapping survey was completed in May of 2008. This survey was designed to select treatment areas and document changes in invasive species abundance. A Tier II survey was completed in August. This survey was designed to monitor the effectiveness of the herbicide treatments, changes in the plant community, and to help plan for future plant management.

3.1 Spring Survey (Invasive Plant Mapping)

On May 28, 2008 a pretreatment invasive species mapping survey was completed on Ridinger Lake. A Secchi disc reading was taken and was found to be 6.0 feet. The survey revealed that 8.1 acres of Eurasian watermilfoil (Figure 1) existed within Ridinger Lake. The largest bed of Eurasian watermilfoil was found on the northwestern shores of the lake and covered 6.4 acres. A smaller narrow bed of Eurasian watermilfoil (1.7 acres) was found on the southeastern side of the lake.

Figure 1. Pretreatment Eurasian watermilfoil beds, Ridinger Lake, May 28, 2008.

Curlyleaf pondweed was also found growing in 0.9 acres of Ridinger Lake (Figure 2). The biggest bed of curlyleaf (0.4 acres) was found along the western side of the lake. It appears that this species will not be a significant problem in Ridinger Lake.

Figure 2. Pretreatment curlyleaf pondweed beds, Ridinger Lake, May 28, 2008.

3.2 Summer Survey (Tier II Survey)

Tier II sampling took place on August 12, 2008. A Secchi disk reading was taken prior to sampling and was found to be 4.5 feet. Plants were present to a maximum of 7.0 feet. 50 sites were sampled throughout the littoral zone. The same points used in the 2007 Tier II survey were used in the 2008 survey. A total of 10 species were collected of which 9 were native. Forty-two of the fifty sites contained vegetation all of which contained native plants. The maximum number of species collected at a site was 6 and the average number of species per site was 2.34. Table 1 shows the results from the Tier II survey.

Table 1. Occurrence and abundance of submersed aquatic plants in Ridinger Lake August 12, 2008.

Occurrence and abundance of submersed aquatic plants in Ridinger Lake						
County:	Kos	Sites with plants:	42	Mean species/site:	2.34	
Date:	8.12.2008	Sites with native plants:	42	Standard error (ms/s):	0.22059289	
Secchi (ft):	4.5	Number of species:	10	Mean native species/site:	2.32	
Maximum plant depth (ft):	7	Number of native species:	9	Standard error (mns/s):	0.22027812	
Trophic status	Mesotrophic	Maximum species/site:	6	Species diversity:	0.77	
Total sites:	50			Native species diversity:	0.77	

Depths 0 to 7 ft	Frequency of Occurrence	Rake score frequency per species				Plant Dominance
Species		0	1	3	5	
common coontail	72.0	28.0	10.0	14.0	48.0	40.8
slender naiad	70.0	30.0	6.0	18.0	46.0	33.2
Chara	40.0	60.0	0.0	8.0	32.0	24.0
leafy pondweed	22.0	78.0	2.0	6.0	14.0	4.4
American pondweed	8.0	92.0	0.0	2.0	6.0	3.2
water stargrass	8.0	92.0	0.0	2.0	6.0	1.6
sago pondweed	6.0	94.0	0.0	0.0	6.0	1.2
American elodea	4.0	96.0	0.0	2.0	2.0	0.8
Eurasian watermilfoil	2.0	98.0	0.0	2.0	0.0	0.4
Illinois pondweed	2.0	98.0	0.0	2.0	0.0	0.4

Depths 0 to 5 ft	Frequency of Occurrence	Rake score frequency per species				Plant Dominance
Species		0	1	3	5	
slender naiad	93.9	6.1	9.1	18.2	66.7	46.7
common coontail	84.8	15.2	9.1	15.2	60.6	44.8
Chara	57.6	42.4	0.0	9.1	48.5	35.8
leafy pondweed	27.3	72.7	0.0	6.1	21.2	5.5
American pondweed	12.1	87.9	0.0	3.0	9.1	4.8
sago pondweed	9.1	90.9	0.0	0.0	9.1	1.8
water stargrass	9.1	90.9	0.0	0.0	9.1	1.8
American elodea	6.1	93.9	0.0	3.0	3.0	1.2
Eurasian watermilfoil	3.0	97.0	0.0	3.0	0.0	0.6
Illinois pondweed	3.0	97.0	0.0	3.0	0.0	0.6

Depths 5 to 7 ft	Frequency of Occurrence	Rake score frequency per species				Plant Dominance
Species		0	1	3	5	
common coontail	47.1	52.9	11.8	11.8	23.5	32.9
slender naiad	23.5	76.5	0.0	17.6	5.9	7.1
leafy pondweed	11.8	88.2	5.9	5.9	0.0	2.4
Chara	5.9	94.1	0.0	5.9	0.0	1.2
water stargrass	5.9	94.1	0.0	5.9	0.0	1.2

Species Observed: White water lily, spatterdock, water willow, duckweed, pickerel weed, swamp loosestrife smartweed, blueflag iris, common cattail, purple loosestrife, and bulrush

Common coontail was found at the highest percentage of sample sites (72.0%) for all depths (Figure 3). It was also the dominant species in depths greater than 5 feet. Slender naiad (*Najas flexillis*) was the second most frequently occurring species at the time of the Tier II survey. Slender naiad was found at 33% of the sites in all depths, and was the most abundant (46.7%) species found in depths from 0-5 feet (Figure 4). Chara (*Chara spp*.) had the third highest frequency of occurrence (40.0%), followed by leafy pondweed (*Potamogeton foliosus*) (22.0%), American pondweed (*Potamogeton nodosus*) (8.0%),

water stargrass (*Zosterella dubia*) (8.0%), sago pondweed (*Potamogeton pectinatus*) (6.0%), American elodea (*Elodea canadensis*) (4.0%), and Illinois pondweed (*Potamogeton illinoensis*) (2%). Eurasian watermilfoil was the only invasive species collected and only it occurred at a single site along the northern shore (Figure 5). A small bed of Eurasian watermilfoil was also present at the inflow in the southwest corner of the lake. This area did not show up in the Tier II survey.

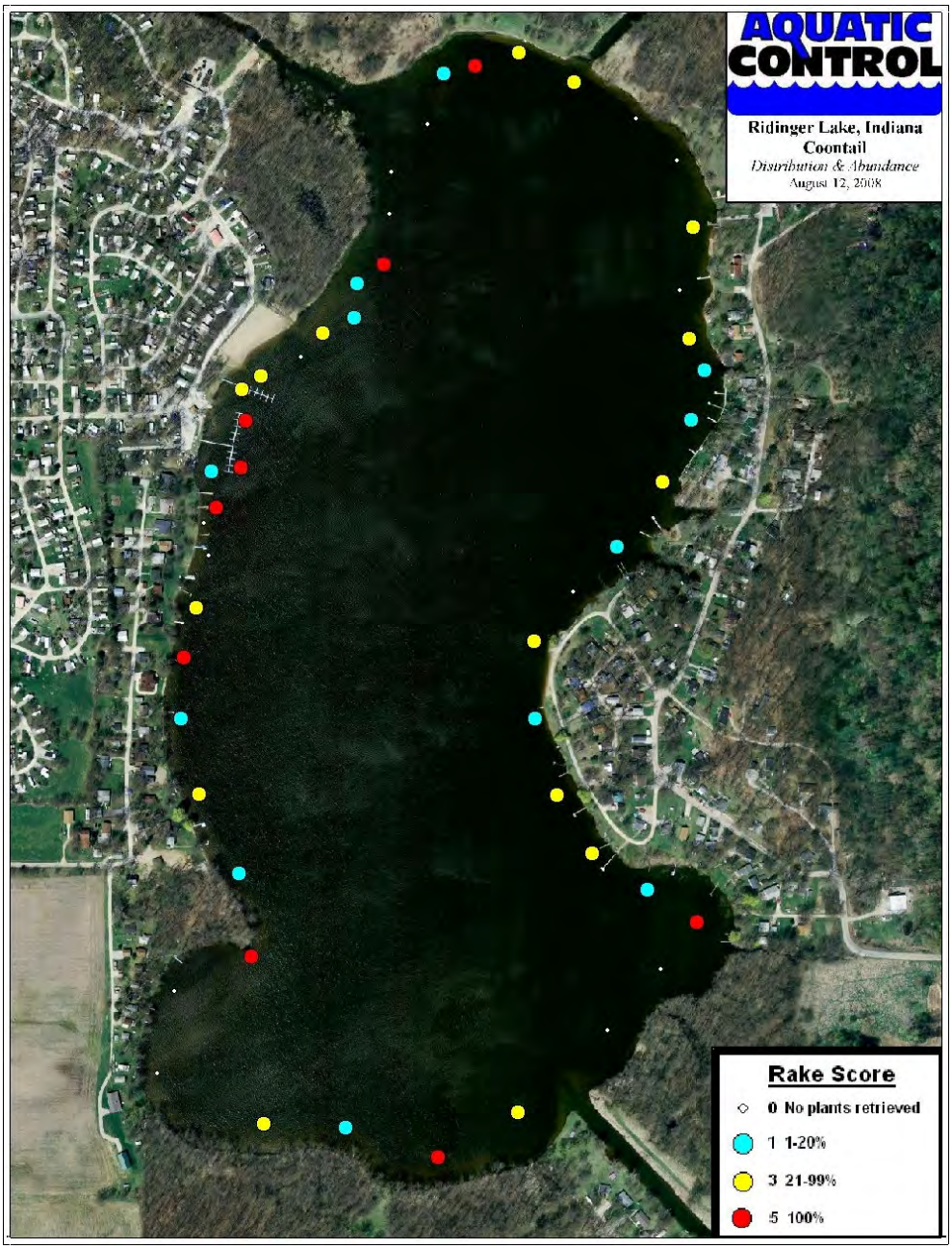

Figure 3. Ridinger Lake, coontail distribution and abundance, August 12, 2008.

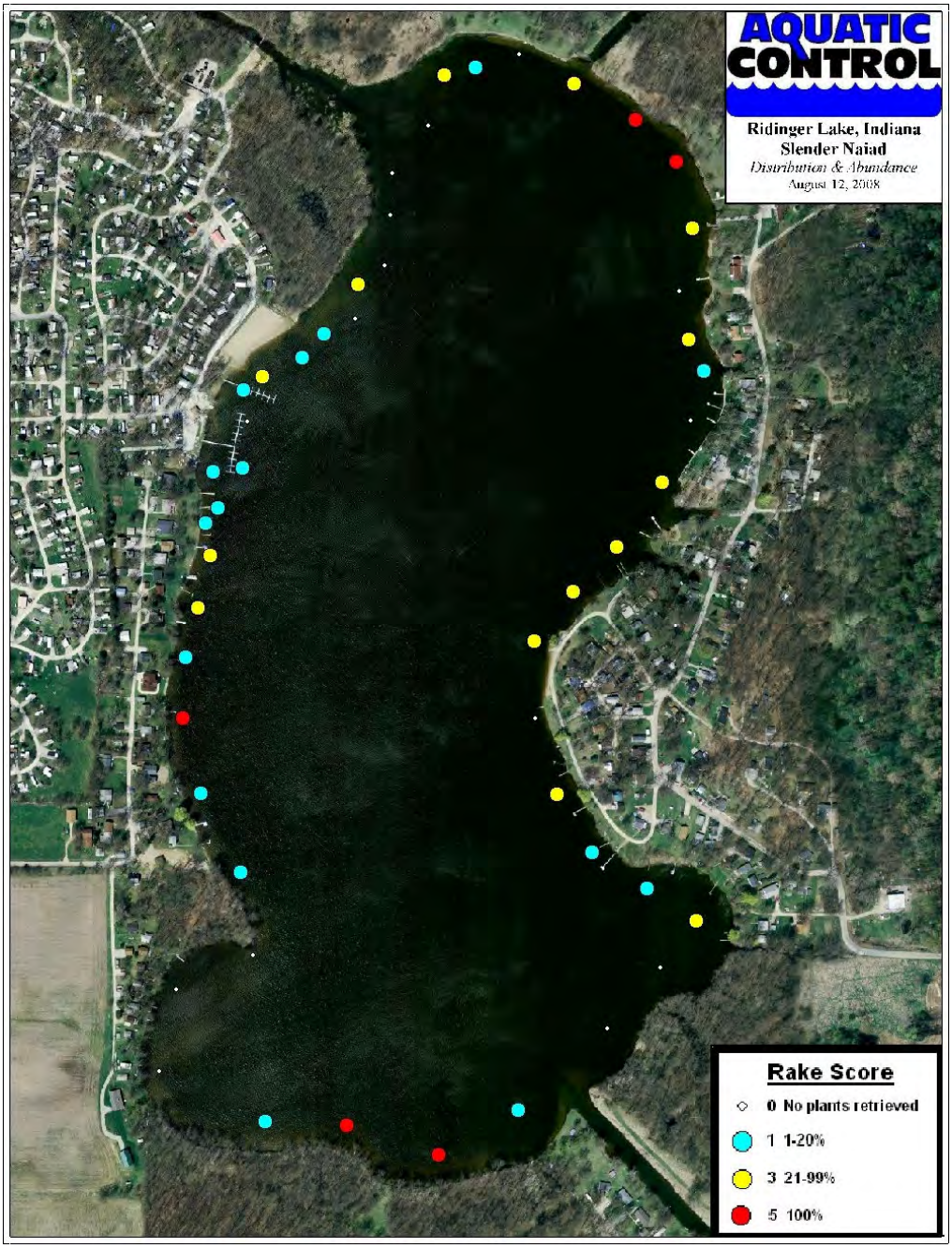

Figure 4. Ridinger Lake, slender naiad distribution and abundance, August 12, 2008.

Figure 5. Ridinger Lake, Eurasian watermilfoil distribution and abundance, August 12, 2008.

3.3 Aquatic Vegetation Sampling Discussion

Goals of the vegetation management plan are to develop and maintain a stable and diverse native population while controlling invasive species, specifically Eurasian watermilfoil. Table 2 shows the percent occurrence of all submersed vegetation collected in the 2007 and 2008 Tier II surveys and it leads one to believe that the goals of the plan are being achieved. Eurasian watermilfoil was found at 46.0% of the sites in the May 2007 Tier II survey and was not present during the summer post-treatment Tier II survey. Milfoil was found growing in 8.3 acres during the 2008 spring invasive survey and was only found at one site during the Tier II survey later in the summer. It appears that the controls have been effective at reducing milfoil abundance and density.

Table 2. Ridinger Lake, plant abundance comparison by year

Species	% of survey sites (5/07)	% of survey sites (7/07)	% of survey sites (8/08)
Eurasian watermilfoil *(Myriophyllum spicatum)*	46.0%	-	2.0%
curlyleaf pondweed *(Potamogeton crispus)*	8.0%	2.0%	-
common coontail *(Ceratophyllum demersum)*	64.0%	28.0%	72.0%
Chara (Chara spp.)	16.0%	18.0%	40.0%
Slender naiad *(Najas flexillis)*	36.0%	28.0%	70.0%
sago pondweed *(Potamogeton pectinatus)*	22.0%	4.0%	6.0%
American elodea *(Elodea canadensis)*	-	-	4.0%
leafy pondweed *(Potamogeton foliosus)*	6.0%	14.0%	22.0%
American pondweed *(Potamogeton nodosus)*	-	2.0%	8.0%
water stargrass *(Zosterella dubia)*	2.0%	-	8.0%
Illinois pondweed *(Potamogeton illinoensis*	-	-	2.0%

While Eurasian watermilfoil percent occurrence is being reduced, species like common coontail, chara, slender naiad, and leafy pondweed have all shown an increase in percent occurrence. Sago pondweed is the only species that appears to have declined in percent occurrence. In addition to the increases in individual species percent occurrence, the overall percentage of sites with native vegetation and mean number of native species per site has also increased over the past two years (Table 3 & Figure 6).

Table 3. Comparison of Tier II data from Ridinger Lake.

Tier II Metric	May-07	Jul-07	Aug-08
Secchi	4	3	4.5
Max Plant Depth	7	7	7
Total Sites	50	50	50
Sites with Plants	41	24	42
Sites with Native Plants	39	24	42
Number of Species	8	7	10
Number of Native Species	6	6	9
Maximum Species/Site	5	3	6
Mean Species/Site	2.00	0.96	2.34
Mean Native Species/Site	1.54	0.96	2.32
Species Diversity Index	0.79	0.77	0.77
Native Species Diversity Index	0.71	0.76	0.77

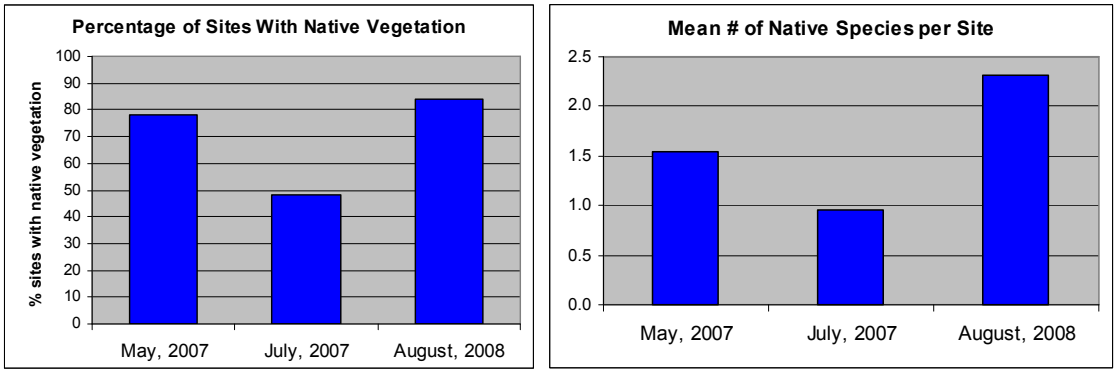

Figure 6. Ridinger Lake, percentage of sites with native vegetation and mean number of native species/site. (data from Table 3.)

No surveys designed to document emergent or rooted floating vegetation were completed on Ridinger Lake in 2008. However, it was observed that this type of vegetation was relatively abundant in the few remaining undeveloped areas of the lake and along several developed shorelines. Spatterdock (*Nuphar spp.)* was the primary species making up these beds (Figure 7). These beds provide important spawning and nursery areas for young fish and should be protected.

Figure 7. Ridinger lake spatterdock beds.

4.0 2008 VEGETATION CONTROL

Eurasian watermilfoil was the primary exotic species of concern in Ridinger Lake during the 2008 season. The 2007 AVMP called for treatment of milfoil with 2,4-D herbicide wherever it was found. The 2007 plan stated that as much as 14 acres of milfoil might need to be treated in 2008.

On June 6, Aquatic Control completed treatment of 8.1 acres of milfoil on Ridinger Lake (Figure 8). This treatment was funded by the RLPOA with matching grants from the LARE program. The treatment areas were determined from data collected during the May 28 invasive species survey. GPS coordinates from the invasive species survey were used during the treatment to insure the accuracy of the application. Granular 2,4-D (trade name: Navigate) was applied evenly over the impaired areas with granular spreaders.

The treatment appears to have been effective. Milfoil was only found at one site during the summer Tier II survey following the application.

Figure 8. Ridinger Lake, milfoil treatment areas, June 3, 2008.

Two contact treatments were performed on Ridinger Lake during the summer of 2008 in order to lessen nuisance conditions caused by dense native vegetation occurring near shore in high use areas. The applications were completed by Aquatic Weed Control of Syracuse, Indiana. These treatments were privately funded and are not part of the LARE program. Figure 9 shows the areas treated by Aquatic Weed Control in 2008. Areas 1-3 were treated on May 25, 2008**.** The shoreline adjacent to the Yogi bear camp ground was treated on August 21, 2008.

Figure 9. Ridinger Lake, contact treatment areas June 3, 2008. (image supplied by Aquatic Weed Control Inc.).

5.0 ACTION PLAN AND BUDGET UPDATE

It is recommended that the Ridinger Lake Property Owners Association continue with similar plant management controls next season with a few exceptions. We also recommend that the RLPOA continue to hold public meetings to further inform the public on invasive plants and best management practices for lawn and shoreline areas.

At least two surveys should be completed in 2009. The first survey should be completed in late May or early June and should focus on mapping of treatment areas for invasive species. The second survey should be completed in late summer and focus on assessing the effects of the treatment on native and targeted exotic vegetation. A tier II survey, similar to the one completed in 2008, should be sufficient to achieve this goal. The cost of performing these surveys and updating the management plan will be $5,000.

Selective milfoil treatments should be completed following the invasive species survey. Based on this year's survey data and past treatments, it is recommended that the association should request enough funds to treat up to 10 acres of milfoil with 2,4-D aquatic herbicide (Figure 10). The maximum cost of such a treatment would be $4,000.

Figure 10. Ridinger Lake potential milfoil treatment areas for 2009.

Currently, there is a relatively diverse native plant population present in Ridinger Lake. This vegetation is very beneficial to the overall health of the lake ecosystem. Vegetation controls should be primarily focused on the use of highly selective controls in order to reduce damage to the native community. However, some small-scale control of native vegetation may be needed in high use areas in order to reduce potential nuisance conditions caused by native vegetation, specifically, common coontail. Treatment of native vegetation shall not exceed more than 50% of the shoreline or 10% of the total surface area. The Association should continue to take actions in an effort to improve water clarity. Improved water clarity will likely increase the abundance and diversity of

native vegetation in Ridinger Lake. These actions are detailed in the 2004 Diagnostic Study.

Table 4 shows the estimated budget for action to be taken on Ridinger Lake through 2012. It is recommended that the Association request $4,000 for treating up to 10 acres of Eurasian watermilfoil, and $5,000 for plant sampling and updating the 2009 plan.

Table 4. Budget estimates for management options.

	2009	2010	2011	2012
Selective treatment of Eurasian watermilfoil with 2,4-D herbicide	$4,000	$3,000	$2,000	$1,000
Plant sampling and plan updates (potential LARE funding with 10% match)	$5,000	$5,000	$5,000	$5,000
Total:	**$9,000**	**$8,000**	**$7,000**	**$6,000**

6.0 PUBLIC PARTICIPATION

An effective aquatic vegetation management plan must include input from lake users. A public meeting was held on October 28, 2008 at the North Webster Community Center. The meeting was advertised in the local newspaper. The public meeting was held in order to gain input concerning the plan from lake users, educate lake users on the benefits of native vegetation, inform lake users about the 2008 vegetation controls, and to update lake users on 2009 plans. Four people were present for the meeting. Three of those in attendance took the time to fill out a survey form. Table 5 shows the results from the survey. The survey respondents indicated that 100% were property owners, and 67% were members of the lake association. As far as uses of the lake, 67% of them used the lake for swimming and fishing and 33% use the lake for boating. Concerning problems with the lake, 100% said that dredging was needed, 33% felt that there is a fish population problem, and 33% expressed concerns about poor water quality. All of the individuals indicated that they were in favor of continuing with the aquatic plant treatments and were happy with the results thus far.

Table 5. Ridinger Lake October 28, 2008 Public meeting survey results.

Ridinger Lake and 10/28/08		
Are you a lake property owner?	Yes 100%	No 0%
Are you currently a member of your lake association?	Yes 67%	No 33%
How many years have you been at the lake?	2 or Less: 0%	5 to 10: 0%
	2 to 5: 33%	Over 10: 67%
How do you use the lake (mark all that apply)	Swimming 67%	Irrigation 0%
	Boating 33%	Drinking water 0%
	Fishing 67%	Other? _____
Do you have aquatic plants at your shoreline in nuisance quantities?	Yes: 33% No: 67%	
Does aquatic vegetation interfere with your use or enjoyment of the lake?	Yes: 33% No: 67%	
Does the level of vegetation in the lake affect your property values?	Yes: 33% No: 67%	
Are you in favor of continuing efforts to control vegetation on the lake?	Yes: 100% No: 0%	
Are you aware that the LARE funds will only apply to work controlling invasive exotic species, and more work may need to be privately funded?	Yes: 100% No: 0%	
Were you satisfied with the results of the LARE funded invasive treatments this season?	Yes: 100% No: 0%	
Mark any of these you think are problems on your lake:		
0% Too many boats access the lake		
0% Use of jet skis on the lake		
0% Too much fishing		
33% Fish population problem		
100% Dredging needed		
0% Overuse by nonresidents		
0% Too many aquatic plants		
0% Not enough aquatic plants		
33% Poor water quality		
0% Pier/funneling problem		

Another topic discussed at the public meeting was the recent discovery of hydrilla (*Hydrilla verticillata*) in Lake Manitou. Hydrilla is an invasive aquatic species that was originally discovered in Florida in the 1960's. There are many characteristics of hydrilla that make it a threat to Indiana waterways. This species can grow in lower light conditions than most native species, grows faster than most native species, and can shade out other species by forming a surface canopy. Hydrilla can be easily confused with native elodea. The best way to distinguish hydrilla from native elodea is that hydrilla typically has five leaves along each whorl along with visible serrated edges along the leaf

margin (Figure 11). What makes controlling the spread of hydrilla difficult is the fact that it can be spread by fragments. That is why it is vitally important that lake users remove all plants and sediment from their boats when entering and leaving the Ridinger Lake. At this time, hydrilla has not been discovered in Ridinger Lake. More information about controlling the spread of hydrilla can be found at www.protectyourwaters.net.

Figure 11. Illustration of hydrilla on the left compared to native elodea on the right. Hydrilla typically contains five toothed leaves per whorl while native elodea typically has three leaves per whorl and the teeth are not visible on the leaves. (Illustrations provided by Applied Biochemist).

7.0 References Cited

Aquatic Control Inc. 2008. Ridinger Lake Aquatic Vegetation Management Plan. Prepared for the Tippecanoe Environmental Lake and Watershed Foundation. North Webster, IN.

8.0 APPENDIX UPDATE

8.1 August Tier II Survey

Lake	Date	Latitude	Longitude	Site	Depth	RAKE	Eurasian watermilfoil (*Myriophyllum spicatum*) MYSP2	common coontail (*Ceratophyllum demersum*) CEDE4	Chara (Chara spp.) CH?AR	Slender naiad (*Najas flexilis*) NAFL	sago pondweed (*Potamogeton pectinatus*) POPE6	American elodea (*Elodea canadensis*) ELCA7	leafy pondweed (*Potamogeton foliosus*) POFO3	American pondweed (*Potamogeton nodosus*) PONO2	water stargrass (*Zosterella dubia*) ZODU	Illinois pondweed (*Potamogeton illinoensis* POIL
ridinger	8.12.2008	41.262812	-85.669238	1	1.0	5		3	5	1						
ridinger	8.12.2008	41.262033	-85.669251	2	5.0	5		5		1						
ridinger	8.12.2008	41.261638	-85.669575	3	4.0	5		5	1	1						
ridinger	8.12.2008	41.261169	-85.66967	4	6.0	3			1	3						
ridinger	8.12.2008	41.260657	-85.669836	5	4.0	3		3		3						
ridinger	8.12.2008	41.260152	-85.669994	6	6.0	5		5		1						
ridinger	8.12.2008	41.259557	-85.670035	7	4.0	5		1	1	5						
ridinger	8.12.2008	41.258809	-85.669797	8	6.0	3		3		1			1		1	
ridinger	8.12.2008	41.258033	-85.669275	9	5.0	1		1		1						
ridinger	8.12.2008	41.257217	-85.669105	10	7.0	5		5								
ridinger	8.12.2008	41.256876	-85.670124	11	7.0	0										
ridinger	8.12.2008	41.256061	-85.670348	12	7.0	0										
ridinger	8.12.2008	41.25557	-85.668951	13	4.0	3		3		1			1			
ridinger	8.12.2008	41.255527	-85.667867	14	2.0	5		1	5	5						
ridinger	8.12.2008	41.255235	-85.666665	15	4.0	5		5		5						
ridinger	8.12.2008	41.255683	-85.665607	16	7.0	3		3		1						
ridinger	8.12.2008	41.256488	-85.664428	17	7.0	0										
ridinger	8.12.2008	41.257092	-85.663727	18	7.0	0										
ridinger	8.12.2008	41.257548	-85.663262	19	4.0	5		5	1	3						
ridinger	8.12.2008	41.257874	-85.663905	20	5.0	1		1		1						
ridinger	8.12.2008	41.258226	-85.664627	21	3.0	5		3	3	1	1					
ridinger	8.12.2008	41.2588	-85.665095	22	5.0	5		3		3						
ridinger	8.12.2008	41.259552	-85.665382	23	6.0	1		1					1			
ridinger	8.12.2008	41.260315	-85.66539	24	5.0	5		3		3			1	1	1	
ridinger	8.12.2008	41.260812	-85.66488	25	4.0	3			1	3				1		1
ridinger	8.12.2008	41.26126	-85.66431	26	3.0	3		1		3						
ridinger	8.12.2008	41.261896	-85.663703	27	2.0	5		3	5	3						
ridinger	8.12.2008	41.262505	-85.663333	28	5.0	1		1								
ridinger	8.12.2008	41.262999	-85.663156	29	4.0	3		1	3	1			1			
ridinger	8.12.2008	41.263308	-85.663359	30	4.0	5		3	1	3			1	5	1	
ridinger	8.12.2008	41.263789	-85.663477	31	7.0	0										
ridinger	8.12.2008	41.264404	-85.663309	32	5.0	5		3		3			1			
ridinger	8.12.2008	41.265064	-85.663515	33	2.0	5			3	5	1		1	1		
ridinger	8.12.2008	41.265476	-85.664059	34	1.0	5			5	5						
ridinger	8.12.2008	41.265838	-85.664867	35	2.0	5		3	1	3	1	1				
ridinger	8.12.2008	41.266125	-85.665598	36	3.0	3	1	3				1				
ridinger	8.12.2008	41.265999	-85.66617	37	2.0	5		5		1						
ridinger	8.12.2008	41.265919	-85.666582	38	2.0	5		1	5	3						
ridinger	8.12.2008	41.265418	-85.666797	39	7.0	0										
ridinger	8.12.2008	41.264951	-85.667268	40	6.0	0										
ridinger	8.12.2008	41.264539	-85.667295	41	6.0	0										
ridinger	8.12.2008	41.264035	-85.667378	42	6.0	5		5								
ridinger	8.12.2008	41.263851	-85.667718	43	2.0	5		1	5	3			1			
ridinger	8.12.2008	41.263512	-85.667762	44	7.0	1		1								
ridinger	8.12.2008	41.263367	-85.668168	45	2.0	5		3	5	1						
ridinger	8.12.2008	41.263124	-85.668455	46	5.0	1				1						
ridinger	8.12.2008	41.262937	-85.668985	47	2.0	5		3	1	3			1		1	
ridinger	8.12.2008	41.262494	-85.66918	48	6.0	5		5								
ridinger	8.12.2008	41.262002	-85.669638	49	2.0	5		1	5	1			1			
ridinger	8.12.2008	41.261493	-85.669734	50	1.0	3			3	1						

8.2 2009 Vegetation Control Permit Application

APPLICATION FOR AQUATIC VEGETATION CONTROL PERMIT
State Form 26727 (R / 11-03)
Approved State Board of Accounts 1987
[ ] Whole Lake [x] Multiple Treatment Areas
Check type of permit

INSTRUCTIONS: Please print or type information

FOR OFFICE USE ONLY
License No.
Date Issued
Lake County

Return to: Page 1 of 2
DEPARTMENT OF NATURAL RESOURCES
Division of Fish and Wildlife
Commercial License Clerk
402 West Washington Street, Room W273
Indianapolis, IN 46204

FEE: $5.00

Applicant's Name	Lake Assoc. Name	
Jodi Lozier	Ridinger Lake Property Owners Assocition	
Rural Route or Street		Phone Number
PO Box 3		574-834-2185
City and State		ZIP Code
Pierceton		46562
Certified Applicator (if applicable)	Company or Inc. Name	Certification Number
Rural Route or Street		Phone Number
City and State		ZIP Code

Lake (One application per lake)	Nearest Town	County
Ridinger Lake	North Webster	Kosciusko
Does water flow into a water supply		[ ] Yes [x] No

Please complete one section for *EACH* treatment area. Attach lake map showing treatment area and denote location of any water supply intake.

Treatment Area #	1	LAT/LONG or UTM's	Treat max of 10 acres of milfoil, areas to be determined following survey
Total acres to be controlled	10	Proposed shoreline treatment length (ft)	Perpendicular distance from shoreline (ft) <200
Maximum Depth of Treatment (ft)	8	Expected date(s) of treatment(s)	late may/early June

Treatment method: [X] Chemical [ ] Physical [ ] Biological Control [ ] Mechanical

Based on treatment method, describe chemical used, method of physical or mechanical control and disposal area, or the species and stocking rate for biological control. 2,4-D granular for milfoil control

Plant survey method: [x] Rake [ ] Visual [ ] Other (specify) Based on Summer 2008 T2 Data

Aquatic Plant Name	Check if Target Species	Relative Abundance % of Community
Common coontail		35
Eurasian watermilfoil	x	1
Slender naiad		30
Sago pondweed		1
Chara		25
American pondweed		1
Leafy pondweed		3
Water stargrass		1
Sago pondweed		1
American elodea		1
Illinois pondweed		1

Page 2 of 2

Treatment Area #	LAT/LONG or UTM's	
Total acres to be controlled	Proposed shoreline treatment length (ft)	Perpendicular distance from shoreline (ft)
Maximum Depth of Treatment (ft)	Expected date(s) of treatment(s)	

Treatment method: ☐ Chemical ☐ Physical ☐ Biological Control ☐ Mechanical

Based on treatment method, describe chemical used, method of physical or mechanical control and disposal area, or the species and stocking rate for biological control. _____

Plant survey method: ☐ Rake ☐ Visual ☐ Other (specify) _____

Aquatic Plant Name	Check if Target Species	Relative Abundance % of Community

INSTRUCTIONS: Whoever treats the lake fills in "Applicant's Signature" unless they are a professional. If they are a professional company who specializes in lake treatment, they should sign on the "Certified Applicant" line.

Applicant Signature	Date
Certified Applicant's Signature	Date

FOR OFFICE ONLY

☐ Approved ☐ Disapproved	Fisheries Staff Specialist
☐ Approved ☐ Disapproved	Environmental Staff Specialist

Mail check or money order in the amount of $5.00 to:

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF FISH AND WILDLIFE
COMMERCIAL LICENSE CLERK
402 WEST WASHINGTON STREET ROOM W273
INDIANAPOLIS, IN 46204

AQUATIC CONTROL