

PIKE LAKE  
Kosciusko County  
2005 Fish Management Report

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## EXECUTIVE SUMMARY

- A general lake survey was completed on Pike Lake from June 20 to 22, 2005. During this survey, water chemistry data was also collected. Two aquatic vegetation surveys were conducted on May 25 and August 1, 2005.
- The Secchi disk reading was 7 ft on May 25 and 3 ft on August 1 and dissolved oxygen concentration was not adequate for fish survival below 14 ft on June 20. Submersed vegetation was found to a maximum depth of 6 ft on May 25 and August 1. Eurasian watermilfoil dominated the plant population in the spring vegetation survey, but chara, coontail, Eurasian watermilfoil, and southern naiad dominated the vegetation community in summer.
- A total of 981 fish, representing 30 species and 1 hybrid sunfish, was collected during the general survey. By number, bluegill ranked first, gizzard shad ranked second, and channel catfish ranked third in the survey sample. By weight, channel catfish ranked first followed by quillback and carp. Bluegill PSD was 39. Bluegill collected in 2005 grew similar to those captured in 2001 and reached 6.0 in TL by age 3. Small numbers of largemouth bass, walleye, and yellow perch were captured during this survey, similar to the numbers observed in previous surveys.
- In Pike Lake, the DFW should maintain a 14-in minimum size limit on largemouth bass and walleye. In order to promote better walleye growth and survivability, the DFW should write a workplan to investigate reducing the stocking rate of walleye fingerlings in Pike Lake from 50 to 30 fish/acre. Because channel catfish are a prominent species in this lake, some effort should be made to creel catfish anglers and determine a more accurate harvest rate for these fish. In addition, the channel catfish fishery in this lake should be better advertised locally.

## TABLE OF CONTENTS

	Page
LIST OF TABLES .....	iv
LIST OF FIGURES .....	v
INTRODUCTION .....	1
METHODS .....	1
RESULTS .....	2
DISCUSSION .....	4
RECOMMENDATIONS .....	5
LITERATURE CITED .....	5
APPENDIX: Lake pages.....	12

LIST OF TABLES

Table	Page
1. Pike Lake vegetation survey results by rake score on May 25 and August 1, 2005. A total of 70 sites was sampled during each survey (60 littoral sites in May and 68 in August).....	7
2. Fish species and number of individuals captured in Pike Lake general surveys from 1978 through 2005. The letter 'P' denotes presence .....	8
3. Age-length key with mean length-at-each-age and the associated variance for bluegill captured using night electrofishing on Pike Lake in June 2005 .....	9

## LIST OF FIGURES

Figure	Page
1. Comparison of bluegill growth in Pike Lake in 2001 and 2005. The error bars represent the standard deviation around each average length. Average length and standard deviation were not calculated for age groups with less than three samples.....	10
2. Length frequency of channel catfish captured in Pike Lake in 2000 and 2005.....	11

## INTRODUCTION

Pike Lake is a 228-acre natural lake located at the north side of the city of Warsaw in Kosciusko County, Indiana. A city park on the south shore provides a handicap accessible boat ramp, dock, parking, swimming beach, and camp ground. Maximum depth is 35 ft and average depth is 13 ft. Previous fisheries surveys were conducted in 1976, 1978, and 1984 and both creel and general surveys were conducted in 1995 and 2000.

The fish population of Pike Lake was dominated by gizzard shad and small yellow perch with few top level predators (Braun 1985). The Pike Lake Conservation Association received permits to stock walleye fingerlings in the mid-1980's in an attempt to utilize some of the available forage and provide a fishery. Limited funds prevented stocking at the recommended rate of 50 to 100 fingerlings per acre, so success was limited. The Department of Natural Resources (DNR) then stocked over 700,000 walleye fry in 1989, but few survived. Hybrid walleye (female walleye X male sauger) fingerlings were stocked in 1990. Hatchery production was not sufficient in 1991 to stock more hybrids in Pike Lake, but more were stocked from 1992 to 1996. An angler creel survey in 1995 indicated a successful fishery had been established (Braun 1996). Beginning in 1996, walleye only have been stocked every year due to our genetic concerns for native sauger populations. Fall electrofishing samples for young-of-year walleye were consistently high at Pike Lake in years when they were stocked (Shipman 1996). A fisheries survey was conducted in 2005 to determine the changes to the fish community in the lake since the last survey.

## METHODS

The Pike Lake general survey was conducted from June 20 to 22, 2005 as part of DFW Work Plan 204755 that covers general fisheries surveys of natural lakes. Some physical and chemical characteristics of the water were measured in the deepest area of the lake (Indiana Division of Fish and Wildlife 2001). Submersed aquatic vegetation was sampled on May 25 and August 1, 2005 using guidelines written by Pearson (2004). A global positioning system (GPS) device was used to record the location of the limnological data collection site, aquatic vegetation sample sites, and fish collection sites.

Fish were collected by pulsed D.C. electrofishing (EF) the shoreline at night with two dippers at 4, 15-minute stations (total EF time = 1 h). Two trap nets and four experimental-mesh

gill nets were also fished for two nights for a total of four trap-net lifts and eight gill-net lifts. All fish collected were measured to the nearest 0.1 in TL and weighed in the field to the nearest 0.01 lb.

Fish scale samples were taken from bluegill, largemouth bass, walleye, white bass, and northern pike for age and growth analysis. Proportional stock density (PSD) and relative stock density (RSD) were calculated for bluegill, largemouth bass, and walleye (Anderson and Neumann 1996). Additionally, an age-length key and mean length-at-age was created and calculated for bluegill captured during this general survey (DeVries and Frie 1996).

## RESULTS

Pike Lake was at normal pool. On June 20, dissolved oxygen concentrations were not adequate for fish survival below 14 ft and Secchi depth was 5 ft, 2 in. The thermocline was located between 16 and 22 ft.

The Secchi disk reading was 7 ft on May 25 and 3 ft on August 1. Submersed vegetation was found to a maximum depth of 6 ft on May 25 and August 1 (Table 1). In 70 sites sampled (60 littoral sites), Eurasian watermilfoil (46%) dominated the vegetation population on May 25. Coontail (10%), leafy pondweed (4%), slender naiad (3%), sago pondweed (1%), wild celery (3%), and elodea (1%) were also present in the lake. On the August 1 vegetation survey, in 70 sampled sites (68 littoral sites), chara (37%), coontail (36%), Eurasian watermilfoil (33%), and southern naiad (30%) dominated the plant community. Other species present included Sago pondweed (16%), brittle naiad (14%), elodea (7%), large waterstarwort (4%), water stargrass (3%), leafy pondweed (3%), clasping-leaf pondweed (1%), slender naiad (1%), and wild celery (1%).

A total of 981 fish, representing 30 species and 1 hybrid sunfish, was collected during this survey. Total weight of the fish sample was approximately 912 lbs. Species collected in past surveys, but not in this survey, include black bullhead, yellow bullhead, golden shiner, Johnny darter, spotfin shiner, bowfin, hybrid walleye, and black redhorse (Table 2). By number, bluegill ranked first, gizzard shad ranked second, and channel catfish ranked third in the survey sample. By weight, channel catfish ranked first followed by quillback and carp.

A total of 209 bluegill was sampled that weighed almost 30 lbs. They ranged in length from 1.7 to 8.6 in TL. Relative abundance by number and weight were 21.3% and 3.3%,

respectively. The electrofishing, gill net, and trap net catch rates were 143 fish/h, 1.9 fish/lift, and 12.8 fish/lift, respectively. The bluegill PSD was 39, which indicates a balanced population (Ney 1999). The bluegill RSD-8 was 1. Growth of bluegill collected during this survey appeared to be similar for all ages to that of bluegill captured in the 2000 survey (Figure 1). Overall mean length of bluegill was 5.7 in (Table 3). Mean length-at-age data from the age-length key indicated bluegill reached 6 in (i.e., quality size) by age 3.

A total of 109 channel catfish, weighing 219 lbs was captured during this survey. These fish ranged in size from 14.3 to 32.6 in TL. All catfish were captured in gill nets at a rate of 13.6 fish/lift. The channel catfish PSD was 72 in 2005 and 84 in 2000. The length-frequency histogram of the catfish captured in 2000 and 2005 shows a large number of fish that are larger than quality size (i.e., 16 inches) in both survey years (Figure 2).

A total of 63 largemouth bass was sampled that weighed 48 lbs. They ranged in length from 5.3 to 19.3 in TL. Relative abundance by number and weight were 6.4% and 5.2%, respectively. The electrofishing, gill net, and trap net catch rates were 59 fish/h, 0.5 fish/lift, 0 fish/lift, respectively. The largemouth bass PSD was 38 and RSD-14 was 14. This indicates that the quality of the largemouth bass fishery is fairly good based on the relatively good PSD value (Ney 1999). Average length data from back-calculation indicated bass reached 14 in (i.e., harvestable size) around age 4. Growth of largemouth bass in 2005 was not compared to that of the previous survey because few bass over age 1 were captured in the 2000 survey.

A total of 27 walleye was sampled that weighed 36 lbs. They ranged in length from 8.3 to 26.1 in TL. Relative abundance by number and weight were 2.8% and 4.0%, respectively. The electrofishing, gill net, and trap net catch rates were 8 fish/h, 2.4 fish/lift, 0 fish/lift. The walleye PSD was 86, which is outside of the range suggested for a balanced population, (i.e., 30-60; Ney 1999). Back-calculated lengths indicated walleye reached 14 in (i.e., harvestable size) between ages 2 and 3 and 15 in (i.e., quality size) in their 3<sup>rd</sup> year of growth. Growth of walleye in 2005 was not compared to those captured in 2000 because too few fish were captured in each year class.

Gizzard shad, white bass, northern pike, and carp were also captured during the general survey. Shad ranked second by number (N = 128) and fourth by weight (77 lbs). Gizzard shad have typically been ranked as either the first or second most abundant species in previous surveys. Three northern pike were captured, ranging in TL from 22.1 to 31.6 in and ages 2 to 6.

Twelve white bass were captured, ranging in TL from 6.9 to 15.8 in and ages 1 to 5. Thirteen carp were captured, ranging in size from 19.0 to 30.9 in TL and were ranked third by weight (10 lbs).

## DISCUSSION

Water quality in Pike Lake is similar to that measured in the 2000 survey. This lake was classified as mesotrophic in 2004 based on the Indiana Trophic Status Index (Indiana Department of Environmental Management [IDEM], 2004). This lake has consistently been classified as mesotrophic since the early 1990's. Despite its mesotrophic classification, water clarity is relatively poor and limits submersed aquatic plant growth with little apparent that aquatic vegetation grows below 6 ft deep. Based on the Pike Lake Feasibility Study conducted in 1990 by International Science and Technology, Inc., channelizing Deeds Creek inlet has allowed greater nutrient runoff from Deeds Creek watershed, which is primarily agricultural fields, causing Pike Lake to act as a sediment trap, thereby degrading its water quality. If the Pike Lake Conservation Association (PLCA) is interested in improving the water quality of this lake and decreasing the amount of sediment and nutrients input, then the PLCA should investigate and help implement best management practices in the Deeds Creek watershed.

Bluegill, gizzard shad, and channel catfish continue to dominate the fishery at Pike Lake similar to what was observed during the 1995 and 2000 surveys. The numbers of captured largemouth bass and yellow perch remain low, similar to the observed results in 1995 and 2000. Unlike bass and perch, however, walleye abundance was good. Currently, walleye are stocked in Pike Lake at a rate of 50 fish/acre. A recent study conducted on Wisconsin's natural lakes stocked with walleye found that the optimal stocking density for their lakes was 75 fish/ha, or approximately 30 fish/acre (Fayram et al. 2005). Stocking 30 fish/acre may increase the growth of the walleye in Pike Lake, thereby increasing the quality of the fishery. The game species that is doing very well in this lake, channel catfish, deserves a little more investigation. According to the 2000 angler creel survey conducted on this lake, catfish anglers only accounted for approximately 2% of the total anglers on the lake (Braun 2002). However, this approximation may be skewed because catfish anglers typically fish after dark, a time that was not creeled during this survey. Since this lake produces channel catfish of quality sizes, the DFW should advertise channel catfish opportunities to the public and monitor the catfish fishery.

## RECOMMENDATIONS

- The DFW should maintain the 14-inch minimum size limit on largemouth bass and walleye at Pike Lake.
- In order to promote better walleye growth, the DFW should write a workplan to investigate reducing the stocking rate of walleye fingerlings in Pike Lake from 50 to 30 fish/acre based on the research results from Wisconsin's study.
- The DFW should better advertise the channel catfish fishery in Pike Lake locally.
- Because channel catfish are a prominent species in this lake, some effort should be made to creel catfish anglers and determine a more accurate harvest rate for these fish.

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Stu Shipman, Fisheries Supervisor  
Date: February 8, 2006

Table 1. Pike Lake vegetation survey results by rake score on May 25 and August 1, 2005. A total of 70 sites was sampled during each survey (60 littoral sites in May and 68 in August).

Date		Rake score					# sites w/vegetation	% sites w/vegetation	
5/25/2005		1	2	3	4	5			
Secchi depth (ft)		7							
Max plant depth (ft)		6							
Species	Date		Rake score					# sites w/vegetation	% sites w/vegetation
	8/1/2005		1	2	3	4	5		
Overall	36		12	4	1	9	53	76	
Wild celery	2		4	0	2	1	26	37	
Coontail	6		6	0	0	2	25	36	
Eurasian watermilfoil	31		2	0	0	1	23	33	
Slender naiad	2		0	0	0	0	5	7	
Leafy pondweed	3		1	1	0	0	2	3	
Sago pondweed	1		0	0	0	0	11	16	
Elodea	1		0	0	0	0	3	4	
Date		Rake score					# sites w/vegetation	% sites w/vegetation	
8/1/2005		1	2	3	4	5			
Secchi depth (ft)		3							
Max plant depth (ft)		6							
Overall	27		12	4	1	9	53	76	
Chara	19		4	0	2	1	26	37	
Coontail	17		6	0	0	2	25	36	
Eurasian watermilfoil	20		2	0	0	1	23	33	
Elodea	5		0	0	0	0	5	7	
Water stargrass	1		1	0	0	0	2	3	
Sago pondweed	9		1	1	0	0	11	16	
Large waterstarwort	3		0	0	0	0	3	4	
Brittle naiad	10		0	0	0	0	10	14	
Southern naiad	15		4	1	0	1	21	30	
Clasping-leaf pondweed	1		0	0	0	0	1	1	
Leafy pondweed	2		0	0	0	0	2	3	
Slender naiad	1		0	0	0	0	1	1	
Wild celery	1		0	0	0	0	1	1	

Table 2. Fish species and number of individuals captured in Pike Lake general surveys from 1978 through 2005. The letter 'P' denotes presence.

Species	1978	1984	1995	2000	2005
Bluegill	45	81	122	205	209
Gizzard shad	1,683	323	452	171	128
Channel catfish	35	53	130	57	109
Longear sunfish	45	94	174	95	74
Largemouth bass	44	54	53	23	63
White sucker	33		53	47	60
Yellow perch	199	186	44	30	48
Quillback	72	117	19	34	46
Golden redbhorse	P	9	10	9	40
White bass	10	23	38	129	37
Spotted sucker	60	27	49	47	37
Walleye		3		55	27
Spotted gar	11	7	17	8	22
White crappie	5	7	2	7	14
Carp	12	14	8	16	13
Black crappie	111	42	3	5	11
Pumpkinseed	44	28	25	9	9
Logperch	25		8	1	7
Longnose gar	1		2	3	4
Green sunfish	3	3	1	2	4
Bluntnose minnow	P			1	3
Redear sunfish	2	2	2	6	3
Northern pike	1	5	6	4	3
Brown bullhead	7	3		3	2
Hybrid sunfish		4	2	1	2
Spottail shiner					2
Brook silverside	29	P	3		1
Warmouth		1		3	1
Northern hogsucker					1
Rock bass					1
Black bullhead		2	2		
Yellow bullhead	2	1		1	
Golden shiner	6	P			
Redhorse spp.	15				
Johnny darter	P		1		
Spotfin shiner				2	
Bowfin				1	
Hybrid walleye			52		
Black redbhorse			3		
<b>Total</b>	<b>2500</b>	<b>1089</b>	<b>1281</b>	<b>975</b>	<b>981</b>

1978 effort: gill net = 9 lifts, trap nets = 9 lifts; AC electrofishing = 1 h day, 1 h night

1984 effort: gill net = 6 lifts, trap nets = 6 lifts; DC electrofishing = 1 h

1995 effort: gill net = 6 lifts, trap net = 6 lifts, DC electrofishing = 1 h

2000 effort: gill net = 5 lifts, trap net = 6 lifts, DC electrofishing = 1 h

2005 effort: gill net = 8 lifts, trap net = 4 lifts, DC electrofishing = 1 h

Table 3. Age-length key with mean length-at-each-age and the associated variance for bluegill captured using night electrofishing on Pike Lake in June 2005.

Length group	# in sample	age 1 (f)	age 2	age 3	age 4	age 5	age 6
1.5	1	1					
2.0	4	4					
2.5	3	3					
3.0	5	2	3				
3.5	6		6				
4.0	28		28				
4.5	28		28				
5.0	12		8	5			
5.5	16		2	14			
6.0	32			29	3		
6.5	45			45			
7.0	18			5	11	2	
7.5	6			1	3	2	
8.0	3				1	2	
8.5	2						2
Total	198	10	75	99	18	6	2
Mean length		2.3	4.2	6.2	7.0	7.5	8.5
Variance		0.223	0.263	0.242	0.290	0.198	0.000

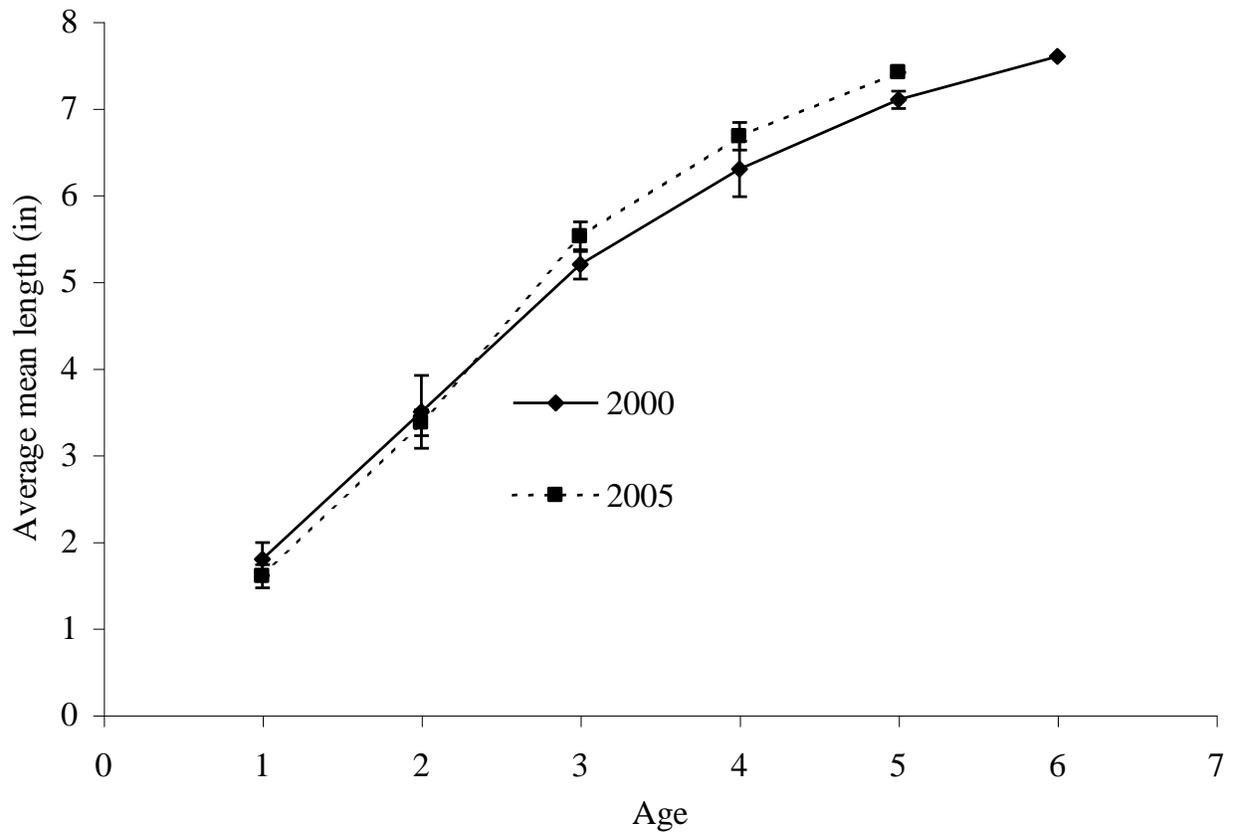


Figure 1. Comparison of bluegill growth in Pike Lake in 2001 and 2005. The error bars represent the standard deviation around each average length. Average length and standard deviation were not calculated for age groups with less than three samples.

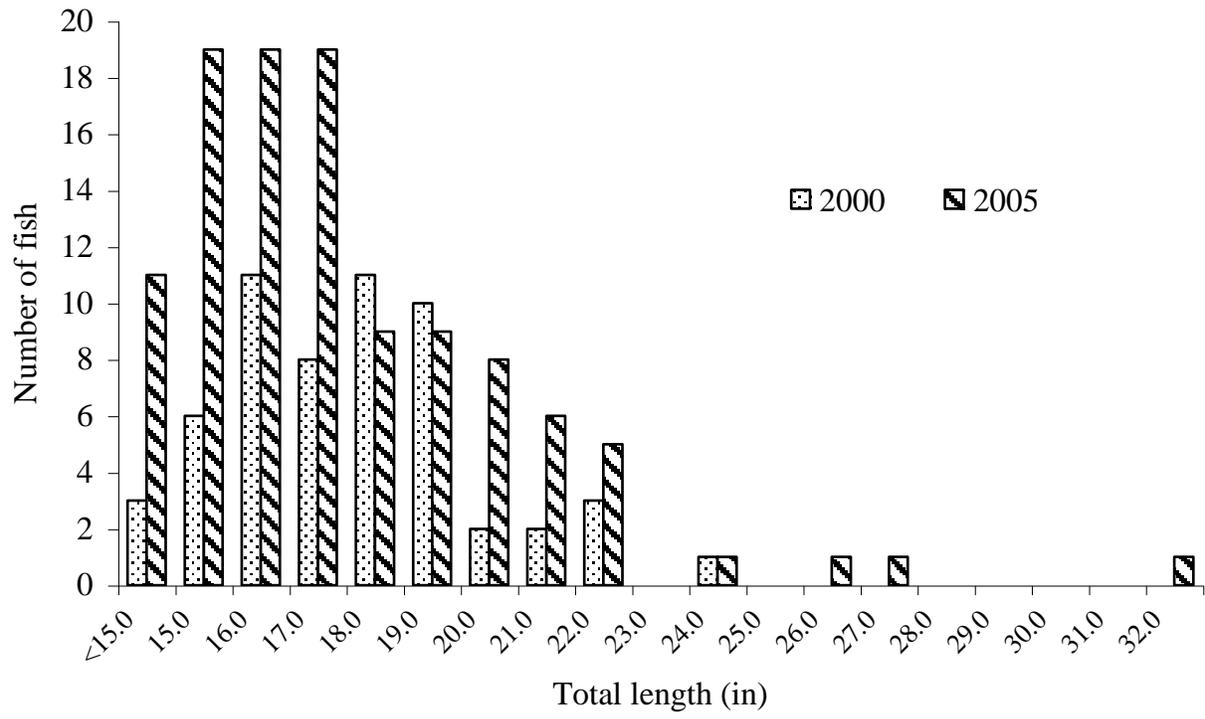


Figure 2. Length frequency of channel catfish captured in Pike Lake in 2000 and 2005.

APPENDIX

Lake Pages

# LAKE SURVEY REPORT

Type of Survey	<input type="checkbox"/> Initial Survey	<input checked="" type="checkbox"/> Re-Survey
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Lake Name Pike Lake	County Kosciusko	Date of survey (Month, day, year) 6/20-22/2005
Biologist's name Edward R. Braun, Angela Benson		Date of survey (Month, day, year)

LOCATION		
Quadrangle Name Warsaw	Range 6E	Section 4, 5, 8, 9
Township Name 32N	Nearest Town Warsaw	

ACCESSIBILITY					
State owned public access site		Privately owned public access site		Other access site City-owned park and boat ramp on south shore	
Surface acres 230	Maximum depth 35 ft	Average depth 13 ft	Acre feet 2,845	Water level 805 ft	Extreme fluctuations 3 ft
Location of benchmark A gage is located on the west shore. Benchmark is on south shore.					

INLETS		
Name Deeds Creek	Location North side shore	Origin Chapman Lake
Unnamed Ditch	East shore	T32N:R6E:S14

OUTLETS			
Name Long Ditch 2/3 mi to Tippecanoe R.	Location North Shore of Little Pike Bay		
Water level control A concrete water-level control structure on Long Ditch			
POOL	ELEVATION (Feet MSL)	ACRES	Bottom type
TOP OF DAM			<input type="checkbox"/> Boulder
TOP OF FLOOD CONTROL POOL			<input type="checkbox"/> Gravel
TOP OF CONSERVATION POOL			<input checked="" type="checkbox"/> Sand
TOP OF MINIMUM POOL			<input checked="" type="checkbox"/> Muck
STREAMBED			<input checked="" type="checkbox"/> Clay
			<input type="checkbox"/> Marl

Watershed use Primarily agricultural woodlots. Pike Lake is located within Warsaw city limits.
Development of shoreline City park and beach area on south shore are maintained. East shoreline is undeveloped. Rest of shoreline has extensive residential development.
Previous surveys and investigations General fisheries surveys: 1976, 1978, and 1984; creel surveys: 1995 and 2000

SAMPLING EFFORT					
ELECTROFISHING	Day hours		Night hours		Total hours
	0		1		1
TRAP NETS	Number of traps		Number of Lifts		Total effort
	2		2		4
GILL NETS	Number of nets		Number of Lifts		Total effort
	4		2		8
ROTENONE	Gallons	ppm	Acre Feet Treated	SHORELINE SEINING	Number of 100 Foot Seine Hauls

Pike Lake 6/20-22/05

PHYSICAL AND CHEMICAL CHARACTERISTICS						
Color		Turbidity			Air temperature: 79 F	
Green		5 Feet	2 Inches (SECCHI DISK)			
Water chemistry GPS coordinates:			N	41.2450844	W	-85.85658261

WATER QUALITY PARAMETERS															
DEPTH (Feet)	Degrees (F)	D.O.	SpC	pH	TDS	D.O.%	Turb.	DEPTH	Degrees (F)	D.O.	SpC	pH	TDS	D.O.%	Turb.
SURFACE	72.3	9.63	0.577	8.4	0.4	114.1	4.2	52							
2	71.9	9.16	0.578	8.42	0.4	108.2	5	54							
4	71.6	9.03	0.578	8.41	0.4	106.2	5.3	56							
6	71.1	7.44	0.58	8.27	0.4	87.1	5.5	58							
8	70.4	5.78	0.586	8.07	0.4	67.1	6.5	60							
10	69.9	4.31	0.589	7.96	0.4	49.7	5.7	62							
12	69.1	3.1	0.597	7.85	0.4	35.6	5.4	64							
14	67.7	2.16	0.611	7.78	0.4	24.3	6.4	66							
16	65.5	0.73	0.62	7.7	0.4	8	7.3	68							
18	60.1	0	0.63	7.67	0.4	0	13.9	70							
20								72							
22	54	0	0.644	7.65	0.4	0	21.7	74							
24	53.1	0	0.647	7.64	0.4	0	22.6	76							
26	52.4	0	0.648	7.63	0.4	0	22.8	78							
28	51.8	0	0.654	7.62	0.4	0	23.1	80							
30	51.5	0	0.658	7.6	0.4	0	23.1	82							
32	51.2	0	0.67	7.37	0.4	0	5999	84							
34								86							
36								88							
38								90							
40								92							
42								94							
44								96							
46								98							
48								100							
50															

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### Occurrence and Abundance of Submersed Aquatic Plants in Pike Lake

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Date: 5/25/05	Littoral sites with plants: 38	Species diversity: 0.53
Littoral depth (ft): 6.0	Number of species: 7	Native diversity: 0.73
Littoral sites: 60	Maximum species/site: 5	Rake diversity: 0.69
Total sites: 70	Mean number species/site: 0.10	Native rake diversity: 0.23
Secchi: 7.0	Mean native species/site: 0.03	Mean rake score: 0.61

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Common Name	Site frequency	Relative density	Mean density	Dominance
Eurasian watermilfoil	53.33	0.47	1.03	11.00
Coontail	11.67	0.16	1.57	3.67
Leafy pondweed	5.00	0.04	1.00	1.00
Wild celery	3.33	0.03	1.00	0.67
Slender naiad	3.33	0.03	1.00	0.67
Sago pondweed	1.67	0.01	1.00	0.33
Elodea	1.67	0.01	1.00	0.33
Filamentous Algae	3.3			

Other Observed Plants: spatterdock, white water lily, cattail, pickerelweed, hardstem bulrush

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### Occurrence and Abundance of Submersed Aquatic Plants in Pike Lake

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Date: 8/1/05	Littoral sites with plants: 53	Species diversity: 0.85
Littoral depth (ft): 6.0	Number of species: 13	Native diversity: 0.83
Littoral sites: 68	Maximum species/site: 7	Rake diversity: 1.87
Total sites: 70	Mean number species/site: 0.26	Native rake diversity: 1.54
Secchi: 3.0	Mean native species/site: 0.22	Mean rake score: 1.60

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Common Name	Site frequency	Relative density	Mean density	Dominance
Chara	38.24	0.57	1.54	11.76
Coontail	36.76	0.56	1.56	11.47
Eurasian watermilfoil	33.82	0.41	1.26	8.53
Southern naiad	30.88	0.44	1.48	9.12
Sago pondweed	16.18	0.20	1.27	4.12
Brittle Naiad	14.71	0.14	1.00	2.94
Elodea	7.35	0.07	1.00	1.47
Large waterstarwort	4.41	0.04	1.00	0.88
Leafy pondweed	2.94	0.03	1.00	0.59
Water stargrass	2.94	0.04	1.50	0.88
Slender naiad	1.47	0.01	1.00	0.29
Wild celery	1.47	0.01	1.00	0.29
Clasping-leaf pondweed	1.47	0.01	1.00	0.29
Filamentous Algae	1.50			

Other Observed Plants: spatterdock, white water lily, cattails, arrowhead, pickerelweed, loostrife, bulrush

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SPECIES AND RELATIVE ABUNDANCE OF FISHES COLLECTED BY NUMBER AND WEIGHT					
*COMMON NAME OF FISH	NUMBER	PERCENT	LENGTH RANGE (inches)	WEIGHT (pounds)	PERCENT
Bluegill	209	21.3	1.7 - 8.6	29.65	3.3
Gizzard shad	128	13.0	8.7 - 14.5	77.44	8.5
Channel catfish	109	11.1	14.3 - 32.6	219.16	24.0
Longear sunfish	74	7.5	2.4 - 6.4	6.38	0.7
Largemouth bass	63	6.4	5.3 - 19.3	47.68	5.2
White sucker	60	6.1	9.8 - 19.4	75.77	8.3
Yellow perch	48	4.9	3.8 - 8.6	4.28	0.5
Quillback	46	4.7	15.0 - 21.4	136.16	14.9
Golden redhorse	40	4.1	6.3 - 19.1	62.94	6.9
White bass	37	3.8	6.1 - 17.3	16.07	1.8
Spotted sucker	37	3.8	5.4 - 19.8	40.15	4.4
Walleye	27	2.8	8.3 - 26.1	36.39	4.0
Spotted gar	22	2.2	16.9 - 37.5	33.55	3.7
White crappie	14	1.4	4.2 - 8.4	2.52	0.3
Carp	13	1.3	19.0 - 30.9	88.77	9.7
Black crappie	11	1.1	4.1 - 11.2	2.66	0.3
Pumpkinseed	9	0.9	4.0 - 7.0	1.73	0.2
Logperch	7	0.7	3.3 - 4.2	0.09	0.0
Longnose gar	4	0.4	18.2 - 36.9	13.14	1.4
Green sunfish	4	0.4	3.5 - 5.5	0.31	0.0
Bluntnose minnow	3	0.3	2.7 - 3.4	0.01	0.0
Redear sunfish	3	0.3	5.1 - 9.3	1.24	0.1
Northern pike	3	0.3	22.1 - 31.6	12.60	1.4
Brown bullhead	2	0.2	12.0 - 12.7	1.84	0.2
Hybrid sunfish	2	0.2	6.4 - 6.5	0.44	0.0
Spottail shiner	2	0.2	3.9 - 4.1	0.03	0.0
Brook silverside	1	0.1	3.2	0.00	0.0
Warmouth	1	0.1	7.5	0.34	0.0
Northern hogsucker	1	0.1	12.6	0.77	0.1
Rock bass	1	0.1	5.8	0.13	0.0
Total (30 Species, 1 Hybrid)	981	100.0		912.24	100.0

\*Common names of fishes recognized by the American Fisheries Society.

NUMBER, PERCENTAGE, WEIGHT, AND AGE OF BLUEGILL									
TOTAL LENGTH (inches)	NUMBER COLLECTED	PERCENT OF FISH COLLECTED	AVERAGE WEIGHT (pounds)	AGE OF FISH	TOTAL LENGTH (inches)	NUMBER COLLECTED	PERCENT OF FISH COLLECTED	AVERAGE WEIGHT (pounds)	AGE OF FISH
1.0					19.0				
1.5	1	0.5	0.00	1	19.5				
2.0	4	1.9	0.01	1	20.0				
2.5	3	1.4	0.01	1	20.5				
3.0	5	2.4	0.03	1, 2	21.0				
3.5	6	2.9	0.03	2	21.5				
4.0	28	13.4	0.04	2	22.0				
4.5	28	13.4	0.06	2	22.5				
5.0	12	5.7	0.09	2, 3	23.0				
5.5	16	7.7	0.12	2, 3	23.5				
6.0	32	15.3	0.16	3, 4	24.0				
6.5	45	21.5	0.21	3	24.5				
7.0	18	8.6	0.27	3, 4, 5	25.0				
7.5	6	2.9	0.30	3, 4, 5	25.5				
8.0	3	1.4	0.39	4, 5	26.0				
8.5	2	1.0	0.50	6	TOTAL	209			
9.0									
9.5									
10.0									
10.5									
11.0									
11.5									
12.0									
12.5									
13.0									
13.5									
14.0									
14.5									
15.0									
15.5									
16.0									
16.5									
17.0									
17.5									
18.0									
18.5									
ELECTROFISHING CATCH	143 fish/h			GILL NET CATCH	1.9 fish/lift		TRAP NET CATCH	12.8 fish/lift	

NUMBER, PERCENTAGE, WEIGHT, AND AGE OF LARGEMOUTH BASS									
TOTAL LENGTH (inches)	NUMBER COLLECTED	PERCENT OF FISH COLLECTED	AVERAGE WEIGHT (pounds)	AGE OF FISH	TOTAL LENGTH (inches)	NUMBER COLLECTED	PERCENT OF FISH COLLECTED	AVERAGE WEIGHT (pounds)	AGE OF FISH
1.0					19.0				
1.5					19.5	1	1.6	3.82	
2.0					20.0				
2.5					20.5				
3.0					21.0				
3.5					21.5				
4.0					22.0				
4.5					22.5				
5.0					23.0				
5.5	1	1.6	0.06	1	23.5				
6.0	1	1.6	0.11	1	24.0				
6.5	1	1.6	0.16	1	24.5				
7.0					25.0				
7.5					25.5				
8.0	2	3.2	0.23	2	26.0				
8.5	4	6.3	0.28	2	TOTAL	63	100		
9.0	5	7.9	0.31	2					
9.5	5	7.9	0.38	2					
10.0	11	17.5	0.45	2, 3					
10.5	6	9.5	0.56	2, 3					
11.0	5	7.9	0.60	2, 4					
11.5									
12.0	1	1.6	0.77	3					
12.5	3	4.8	0.91	3, 4					
13.0	5	7.9	1.03	3, 4					
13.5	5	7.9	1.16	3, 4					
14.0	1	1.6	1.27	4					
14.5	2	3.2	1.51	3, 4					
15.0	1	1.6	1.86	5					
15.5	1	1.6	1.83	5					
16.0	1	1.6	2.11	5					
16.5	1	1.6	2.67	5					
17.0									
17.5									
18.0									
18.5									

ELECTROFISHING CATCH	59 fish/h	GILL NET CATCH	0.5 fish/lift	TRAP NET CATCH	0 fish/lift
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NUMBER, PERCENTAGE, WEIGHT, AND AGE OF WALLEYE									
TOTAL LENGTH (inches)	NUMBER COLLECTED	PERCENT OF FISH COLLECTED	AVERAGE WEIGHT (pounds)	AGE OF FISH	TOTAL LENGTH (inches)	NUMBER COLLECTED	PERCENT OF FISH COLLECTED	AVERAGE WEIGHT (pounds)	AGE OF FISH
1.0					19.0	2	7.4	1.93	4, 7
1.5					19.5	1	3.7	2.40	4
2.0					20.0				
2.5					20.5				
3.0					21.0	1	3.7	2.24	8
3.5					21.5				
4.0					22.0				
4.5					22.5				
5.0					23.0	1	3.7	3.75	8
5.5					23.5				
6.0					24.0				
6.5					24.5				
7.0					25.0				
7.5					25.5				
8.0					26.0	1	3.7	5.53	9
8.5	1	3.7	0.16	1	TOTAL	27	100		
9.0									
9.5	1	3.7	0.27	1					
10.0	2	7.4	0.29	1					
10.5	1	3.7	0.31	1					
11.0	1	3.7	0.36	1					
11.5									
12.0									
12.5	1	3.7	0.52	2					
13.0									
13.5	1	3.7	0.74	2					
14.0	3	11.1	0.79	2					
14.5									
15.0									
15.5	1	3.7	1.24	2					
16.0	2	7.4	1.10	3					
16.5	3	11.1	1.30	4, 5					
17.0	2	7.4	1.41	3, 5					
17.5	1	3.7	1.65	4					
18.0	1	3.7	1.52	4					
18.5									

ELECTROFISHING CATCH	8 fish/h	GILL NET CATCH	2.4 fish/lift	TRAP NET CATCH	0 fish/lift
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Back-calculated lengths-at-age for bluegill, largemouth bass, and walleye from Pike Lake in 2005.

Species: Bluegill  
Intercept = 0.8

Year Class	Number Aged	Back Calculated Length (inches) at Each Age					
		I	II	III	IV	V	VI
2004	7	1.7					
2003	31	1.6	3.3				
2002	33	1.5	3.5	5.6			
2001	11	1.8	3.5	5.7	6.8		
2000	5	1.5	3.2	5.3	6.6	7.4	
1999	1	1.6	3.0	5.6	8.0	8.3	8.5
Average Length		1.6	3.4	5.5	6.7	7.4	0
Standard Deviation		0.133	0.149	0.171	0.159	0	0

Species: Largemouth bass  
Intercept = 0.8

Year Class	Number Aged	Back Calculated Length (inches) at Each Age					
		I	II	III	IV	V	VI
2004	3	5.4					
2003	31	4.5	9.5				
2002	9	4.7	8.7	11.9			
2001	11	4.0	8.1	11.5	13.1		
2000	3	6.9	11.3	13.6	14.9	15.5	
1999	1	3.8	7.8	10.7	13.2	15.3	16.3
Average Length		5.1	9.4	12.3	14.0	15.5	0.0
Standard Deviation		1.136	1.370	1.104	1.320	0	0

Species: Walleye

Intercept = 2.2

Year Class	Number Aged	Back Calculated Length (inches) at Each Age								
		I	II	III	IV	V	VI	VII	VIII	IX
2004	6	9.0								
2003	6	8.7	13.2							
2002	3	8.5	13.0	15.9						
2001	6	8.7	13.5	16.3	17.9					
2000	3	7.1	11.5	13.8	15.1	16.2				
1999	0	0	0	0	0	0	0			
1998	1	9.3	15.5	16.9	17.3	17.9	18.4	18.8		
1997	2	12.5	16.8	18.1	19.3	20.1	20.7	21.4	21.9	
1996	1	14.3	18.2	19.9	21.3	23.0	24.1	25.3	25.7	25.9
Average Length		8.4	12.8	15.3	16.5	16.2	0	0	0	0
Standard Deviation		0.761	0.879	1.355	1.932	0	0	0	0	0

Locations of gear types in Pike Lake given in decimal degrees.

GILL NETS				TRAP NETS				ELECTROFISHING			
1 N	41.24907017	W	-85.84158906	1 N	41.25726163	W	-85.84684082	1 N	41.24890387	W	-85.84126183
2 N	41.25038445	W	-85.83618172	2 N	41.25316322	W	-85.84358462	N	41.25011623	W	-85.83691129
3 N	41.25316858	W	-85.84499010	3 N	41.24605000	W	-85.84710904	2 N	41.25276089	W	-85.84410497
4 N	41.25950933	W	-85.84816047	4 N	41.24947786	W	-85.83670207	N	41.25671983	W	-85.84531196
5 N	41.25707924	W	-85.84787616					3 N	41.25472426	W	-85.84654578
6 N	41.25329196	W	-85.84141203					N	41.25666082	W	-85.84906706
7 N	41.24499321	W	-85.84430882					4 N	41.24997139	W	-85.84774741
8 N	41.24761105	W	-85.84792980					N	41.24597490	W	-85.84706076