# Pike Lake

Kosciusko County

2008 Fish Management Report

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## EXECUTIVE SUMMARY

- Pike Lake is a 228 acre natural lake located in the city of Warsaw. The lake consists of two basins, which are connected by a shallow channel.

- A roving-access creel survey was conducted from April 15 to September 25, 2008. A stratified random sampling design was used to select ten days to be sampled every two weeks, including seven weekdays and three weekend days. An overnight shift was included in an attempt to gain more information on catfish use.

- Summer sampling effort consisted of three experimental gill net sets on June 30 directed at catfish and fall walleye sampling effort consisted of 1.25 h of pulsed D.C. night electrofishing with two dippers on October 16.

- During the creel survey conducted on Pike Lake anglers harvested an estimated 10,434 fish. Bluegill accounted for 59% of the total harvest followed by crappie (black and white combined) and walleye, which accounted for 24% and 6% of the harvest, respectively.

- During the survey period anglers fished for an estimated total of 21,691 h (95 h/acre). Shore anglers accounted for 57% of all angler effort. The greatest amount of effort was documented during the month of June, followed by July.

- Harvested bluegills ranged in length from 5.0 to 10.5 in and averaged 7.0 in. Harvested walleyes ranged in length from 14.0 to 24.5 in and averaged 16.0 in. Harvested channel catfish ranged in length from 14.0 to 24.5 in and averaged 16.0 in.

- A total of 80 game fish, representing 6 species, was collected during targeted sampling. Black crappies were the most abundant fish collected by number (36%), followed by channel catfish (29%), and walleye (14%).

- A total of 23 channel catfish, ranging in total length from 13.1 to 30.6 in was collected during this survey. The channel catfish PSD was 91 and catfish of quality size (16 in or greater) comprised 91% of the sample. The gill net catch rate was 8 fish/lift.

- A total of 199 walleyes, ranging in total length from 7.3 to 21.7 in was collected during fall sampling. The overall electrofishing catch rate was 159 fish/h, and the electrofishing catch rate of age-0 walleye was 80 fish/h. The electrofishing catch rate of age-1 walleye was 48 fish/h.

- The Pike Lake fishery is currently providing excellent fishing opportunities for Indiana anglers.

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# INTRODUCTION

Pike Lake is a 228 acre natural lake located in the city of Warsaw. The lake consists of two basins, which are connected by a shallow channel. The south basin is the larger of the two and has a maximum depth of 35 ft. The north basin (Little Pike) is shallow and has maximum depth of 10 ft. The main inlet of Pike Lake is Deeds Creek which originally entered the north basin on the east shoreline, but was rerouted and currently enters the south basin on the north shoreline. The outlet is Lones Ditch which exits the north basin on the north shoreline and flows into the Tippecanoe River. A concrete water control structure is located on Lones Ditch which is passable by fish during high water. A city park on the south shoreline of the south basin provides a handicap accessible boat ramp, swimming beach, restrooms, and campground. Due to the accessibility the park provides, Pike Lake is a popular fishing destination for both boat and shore anglers.

Pike Lake was stocked with walleyes by the Pike Lake Conservation Club in the mid-1980's. Limited funds prevented stocking at the recommended rate of 50 fingerlings per acre, therefore limiting the success of the stockings. The Indiana Department of Natural Resources stocked walleye fry in 1989 with limited survival, and switched to saugeye fingerlings in 1990. Following the 1990 stocking, saugeyes were stocked annually from 1992 through 1996. Saugeye stockings were replaced by walleye stockings in 1996, and continue to be successfully stocked on an annual basis (Table 1).

The last general fish population survey on Pike Lake was conducted in 2005 and the most recent creel survey was conducted in 2000. Channel catfish are a prominent species in the lake, but due to a lack of creel effort during overnight hours it is assumed that anglers fishing for catfish were not accurately represented in previous creel surveys (Benson 2006). Following the 2005 survey it was recommended that more information was needed on channel catfish and channel catfish anglers for proper management. In 2008 a creel survey, which included an overnight shift was conducted in an attempt to gain more information on the catfish fishery. Catfish sampling during summer and a fall evaluation of walleye were also conducted in 2008 to further evaluate the channel catfish fishery and survival of stocked walleye.

## METHODS

### Creel Survey

A roving-access creel survey was conducted from April 15 to September 25, 2008. A stratified random sampling design was used to select ten days to be sampled every two weeks, including seven weekdays and three weekend days. All holidays were considered weekend days. Each day to be surveyed was divided into three 7.5-hour shifts; shift A ran from 7:00 a.m. to 2:30 p.m., shift B ran from 3:00 p.m. to 10:30 p.m., and shift C ran from 11:00 p.m. to 6:30 a.m. Each shift was sampled equally throughout the survey. Eight hourly counts of both boat and shore anglers were conducted each shift to estimate fishing pressure. Angler interviews were also conducted to estimate fishing pressure as well as catch and harvest. Interviews were conducted throughout the shift and as anglers completed their trip. Both complete and incomplete trip interviews were recorded. Information obtained from anglers included hours fished, number in party, county of residence, fishing preference, and the number of each species harvested. The total length of each fish harvested was measured to the nearest 0.5 in TL. The number of walleye caught and released that were smaller than or greater than the legal size limit was also noted. Lastly, anglers were asked to rate the quality of the fishery, if they supported more restrictive harvest limits on channel catfish, and if they were in support of the walleye stocking program on Pike Lake. Unless otherwise noted angler harvest and catch rates for individual species were similar when C shifts were excluded.

### Summer Catfish Evaluation

Catfish sampling at Pike Lake was conducted from June 30 to July 1, 2008. Temperature and oxygen profiles were collected at the deepest point of both basins using a Hydrolab Quanta®. Submersed aquatic plants were sampled on July 29, 2008 according to the Tier II Aquatic Vegetation Survey Protocol (IDNR 2007). A Garmin™ global positioning system device was used to record all sampling locations.

Fish collection effort consisted of three experimental gill net sets (Figure 1). Total length of all game fish was measured to the nearest 0.1 in and weight was measured to the nearest 0.01 lbs. Pectoral spines were collected from channel catfish for age determination and back-calculated lengths-at-age. Catfish spines were cut into 0.03 in sections using a Buehler® Isomet low-speed diamond blade sectioning saw. Sections were observed under a stereomicroscope and digitized using a Paxcam® digital microscope camera (MIS, Inc., 2007). After identifying the

central lumen of the spine, annuli measurements were made using SigmaScan 5.0 (Systat software, 2007) perpendicular to the central lumen and extending edgeward. Values were then input into FishBC® (Doll, 2003) to estimate back-calculated lengths. Five scales per half-inch group were collected from black crappies and walleyes for age determination and back-calculated lengths-at-age. Length frequency distribution for reporting purposes were grouped in half-inch increments which are defined as X.0 – X.4 and X.5 – X.9. Age-length keys were also constructed to determine mean length-at-age, and proportional stock density (PSD) was calculated for channel catfish (Anderson and Neumann 1996).

Fall Walleye Evaluation

The fall evaluation of walleye at Pike Lake was conducted on October 16, 2008. Fish collection effort consisted of 1.25 h of pulsed D.C. night electrofishing with two dippers. Total length was measured to the nearest 0.1 in. Five scales per half-inch group were collected for age determination and back-calculated lengths-at-age. An age-length key was also constructed to determine mean length-at-age.

## RESULTS

Creel Survey

During the creel survey conducted on Pike Lake anglers harvested an estimated 10,434 fish (Table 2). Of these fish 10,388 were harvested during A and B shifts and only 46 were harvested during C shifts (Table 3, Table 4). Angler harvest was greatest during the month of May, followed by August. Collectively boat anglers accounted for 61% of the harvest and all anglers combined harvested 0.9 fish/h (Table 5). Bluegill accounted for 59% of the total harvest followed by crappie (black and white combined) and walleye, which accounted for 24% and 6% of the harvest, respectively (Table 2). Bluegill, walleye, and white bass accounted for 36%, 27%, and 22% of the harvest during the 2000 creel survey, respectively (Table 6). Where as bluegill, saugeye, and white bass accounted for 38%, 26%, and 13% during the 1995 creel survey.

During the survey period, anglers fished an estimated total of 21,691 h (95 h/acre) (Table 7). Ninety-five percent of the angler hours were during A and B shifts, anglers only fished an estimated 985 h during C shifts. Anglers fished an estimated total of 11,639 h in 1995 and 9,221 h in 2000 (Table 6). Shore anglers accounted for 57% of all angler effort. The greatest amount of effort was documented during the month of June, followed by July. Average complete trip

length was 3.3 h for boat anglers and 2.5 h for shore anglers (Table 8). Average complete boat trip length for boat anglers was 3.2 h during A and B shifts and 4.3 h during C shifts (Table 9, Table 10). Average complete trip for shore anglers was similar for all shifts.

An estimated 6,121 bluegills were harvested by anglers during the survey period (Table 2). Harvested bluegills ranged in length from 5.0 to 10.5 in and averaged 7.0 in (Table 11). Of the bluegills harvested, 17% were equal to or greater than 8 in. The greatest number of bluegill was harvested during the month of July, followed by August. Bluegills were harvested at a rate of 0.72 fish/h by those anglers targeting bluegill, with an overall harvest rate of 0.26 fish/h for all anglers combined.

Crappie ranked second in harvest with 2,457 harvested by anglers (Table 2). Harvested crappies ranged in length from 7.0 to 10.5 in and averaged 9.0 in (Table 11). The greatest number of crappie was harvested during the month of August, followed by May. Crappies were harvested at a rate of 1.5 fish/h by those anglers targeting crappie, with an overall harvest rate of 0.09 fish/h for all anglers combined.

A total of 580 walleyes (2.5 fish/acre) was harvested by anglers during the survey, ranking the species third in angler harvest (Table 2). Harvested walleyes ranged in length from 14.0 to 24.5 in and averaged 16.0 in (Table 11). More walleyes were harvested during the month of May, followed by June. Walleyes were harvested at a rate of 0.09 fish/h by those anglers targeting walleye. The overall harvest rate of walleyes was 0.02 fish/h for all anglers combined. A total of 127 legal size walleyes was caught and released during the survey, with an additional 2,611 released that were sub-legal size (Table 12). Only 2% (66 fish) of the walleyes caught and released took place during C shifts. Walleyes were caught at a rate of 0.51 fish/h by those anglers targeting walleye, with an overall catch rate of 0.11 fish/h for all anglers combined.

White bass ranked fourth in harvest with 332 harvested by anglers (Table 2). Harvested white bass ranged in length from 10.5 to 17.0 in and averaged 13.5 in (Table 11). The greatest number of white bass was harvested during the month of July, followed by May. White bass were harvested at a rate of 0.48 fish/h by those anglers targeting white bass, with an overall harvest rate of 0.01 fish/h for all anglers combined.

A total of 141 channel catfish was harvested by anglers during the survey (Table 2). Harvested channel catfish ranged in length from 14.0 to 24.5 in and averaged 16.0 in (Table 11). The greatest number of channel catfish was harvested during the month of May, followed by

July. Only three channel catfish were harvested during C shifts. Channel catfish were harvested at a rate of less than 0.01 fish/h by those anglers targeting channel catfish as well as all anglers combined. Channel catfish anglers harvested channel catfish at a rate of 0.11 and 0.08 in 1995 and 2000, respectively. A total of 198 channel catfish was caught and released during the survey, 76 of those fish were caught during C shifts (Table 13). Channel catfish were caught at a rate of 0.07 fish/h by those anglers targeting channel catfish, with an overall catch rate of 0.02 fish/h for all anglers combined. Anglers specifically targeting channel catfish fished more during C shifts, and had a catch rate of 0.11 fish/h. Catfish anglers who fished during the A and B shifts had a catch rate of 0.03 fish/h.

Only 95 largemouth bass were harvested by anglers during the survey, with an additional 1,158 caught and released (Table 2). Harvested largemouth bass ranged in length from 14.0 to 15.5 in (Table 11). Largemouth bass were caught at a rate of 0.35 fish/h by those anglers targeting largemouth bass, with an overall catch rate of 0.06 fish/h for all anglers combined. The greatest number of largemouth was caught during the month of June, followed by May.

Other species caught or harvested during the survey included redear sunfish, yellow perch, northern pike, bowfin, miscellaneous suckers, and miscellaneous sunfish. One party also harvested a spotted gar and carp using a bow and arrow during a C shift in August. A total of 315 redear was harvested by anglers during the survey, ranking the species fifth by number in harvest (Table 2). Harvested redear ranged in length from 6.0 to 9.0 in and averaged 7.5 in (Table 11). A total of 277 yellow perch was harvested by anglers, ranging in length from 6.0 to 11.0 in and averaged 8.5 in. Only two northern pike were observed during the survey measuring 28.0 and 34.5 in.

More anglers fished for bluegill than any other species during the survey, accounting for 24% of the responses (Table 14). Anglers fishing for anything made up 17% of the responses. Walleye, channel catfish, and largemouth bass were also among the top five targeted species, accounting for 10%, 8%, and 7% of the responses, respectively. Anglers fishing for any species and walleye made up the majority of the responses in both the 1995 and 2000 creel surveys. Channel catfish ranked third in angler preference in 1995 while largemouth bass ranked third in 2000. Bluegill was targeted more during all months, except April and May when the majority of anglers stated they were targeting walleye and anything, respectively (Table 15). Channel catfish and walleye were targeted more by anglers than any other fish during C shifts, accounting

for 50% and 14% of the responses, respectively. Channel catfish also made up the majority of fish targeted during C shifts for all months, except April and May when the majority of anglers claimed to be targeting walleye and anything, respectively.

Anglers from thirty counties were represented during this survey, compared to 22 in both 1995 and 2000 surveys (Table 16). The majority of anglers interviewed were from Kosciusko County, accounting for 78% of all anglers. Elkhart County ranked second and accounted for 3% of the anglers. Anglers from nineteen different counties targeted walleye at Pike Lake, while anglers from nine counties targeted channel catfish. Kosciusko County anglers accounted for 66% and 89% of those anglers targeting walleye and channel catfish, respectively.

During the interview process anglers were asked if the overall quality of fishing at Pike Lake was improving, staying the same, or declining. Of the 752 anglers who responded, 25% said the fishing was improving, 59% said it was staying the same, and 16% thought it was declining (Table 17). Of the anglers that thought the overall quality of fishing was improving the majority were targeting bluegill. While carp anglers made up the majority of the 16% who felt fishing was declining. During the interview, anglers were also asked if they supported the walleye stocking program. Of the 931 anglers who responded, 98% stated they supported the program.

Anglers were also asked if they would support more restrictive harvest limits on channel catfish at Pike Lake. If the answer was yes, they were also asked what type of limits they would support. Of the 933 anglers who responded, 65% said they would, 19% said they would not, and another 16% were undecided (Table 18). Of the 95 channel catfish anglers, 77% said they would, while 22% said they would not. The majority of anglers that were supportive of more restrictive limits were in favor of size limits. Other regulations mentioned included bag limits, slot limits, and a closed season.

Summer Catfish Evaluation

On June 30 the water temperature of the south basin was 72.2ºF at the surface and a dissolved oxygen concentration greater than 3.0 ppm was present down to a depth of 12 ft. The temperature of the smaller north basin was 73.0ºF, and the dissolved oxygen concentration was adequate for fish survival throughout the water column. A total of nine native species and two non-native plant species were collected. Sago pondweed, slender naiad, leafy pondweed,

southern naiad, and Chara sp. were equally represented (frequency = 13%). No plants were observed at depths greater than 5 ft.

A total of 80 game fish, representing 6 species, was collected during this survey. Total weight of the fish sampled was approximately 84 lbs. Black crappie was the most abundant species collected by number (36%), followed by channel catfish (29%), and walleye (14%).

A total of 29 black crappies was collected at Pike Lake, at a catch rate of 10 fish/lift. Gill net catch rates of black crappies was lower in 2000 and 2005, <1 fish/lift and 1 fish/lift, respectively. Black crappies of quality size (8 in or greater) comprised 41% of the sample. Based on the age-length key and back-calculated lengths-at-age, the majority of black crappies reach 8 in between ages 2 - 3.

A total of 23 channel catfish, ranging in total length from 13.1 to 30.6 in was collected during this survey. The channel catfish PSD was 91 and catfish of quality size (16 in or greater) comprised 91% of the sample. The gill net catch rate was 8 fish/lift. Gill net catch rates of channel catfish were higher in 1995, 2000, and 2005, 22 fish/lift, 11 fish/lift, and 14 fish/lift, respectively. Channel catfish PSD during 1995, 2000, and 2005 were 41, 84, and 72, respectively. Historically the size structure of channel catfish at Pike Lake has primarily been comprised of quality sized fish (Figure 2). Based on the age-length key and back-calculated lengths-at-age, the majority of channel catfish reach 16 in between ages 5 – 6. Of the eighteen channel catfish that were aged, fifteen were from the 1999 year class.

A total of 11 walleyes was collected at Pike Lake. Walleye gill net catch rates during 2000, 2005, and 2008 were 7, 2, and 3 fish/lift, respectively. Total length of walleyes collected ranged from 9.7 to 21.9 in, and included six fish over the 14 in minimum size limit. Based on the age-length key and back-calculated lengths-at-age, the majority of walleyes reach 14 in by age 3.

Other species worth noting include white crappie, yellow perch, and white bass. White crappie ranged in total length from 5.6 to 10.7 in, while yellow perch and white bass ranged in length from 6.2 to 8.0 and 11.2 to 13.5 in, respectively.

Fall Evaluation

A total of 199 walleyes, ranging in total length from 7.3 to 21.7 in was collected during fall sampling. The overall electrofishing catch rate was 159 fish/h, and the electrofishing catch rate of age-0 walleye was 80 fish/h. The electrofishing catch rate of age-1 walleye was 48 fish/h.

Of the walleyes collected, 12% were equal to or greater than 14 in. The overall electrofishing catch rate during the previous fall evaluation in 2001 was 166 fish/h, and the electrofishing catch rate of age-0 walleye was 130 fish/h. Two, age-1 saugers were also collected during the fall evaluation measuring 12.8 and 13.7 in total length.

## DISCUSSION

Angler effort at Pike Lake increased substantially compared to the 1995 and 2000 creel surveys. Total fishing pressure during 2008 was nearly double the previous two estimates, and is likely responsible for the increase in the number of fish harvested. Number of fish harvested was nearly double the number estimated in 1995, and was ten times higher than the 2000 estimate. Overall harvest rates were similar between 1995 (0.48 fish/h) and 2008 (0.42 fish/h), but were drastically different in 2000 (0.12 fish/h). It is unclear as to why harvest rates were so low during 2000, and why angler effort was so high in 2008. The number of anglers targeting bluegill and crappie increased the most in 2008 compared to the previous surveys, and it was no surprise that these two species accounted for most of the harvest as well. When comparing gill net catches since 1995 the black crappie population, a species known to be cyclic, appears to be larger than in previous years and is likely responsible for the increase in harvest and effort for crappie. No such changes were observed with the bluegill population. Another possible reason for the increase in angler effort could be due to word of mouth by anglers. Despite similar responses by anglers on the quality of the Pike Lake fishery the number of counties represented increased by eight when compared to the previous surveys.

Channel catfish continue to be a prominent species at Pike Lake, although it appears harvest has declined compared to previous creel surveys. When comparing past gill net catches since 1995, it also appears the population is slightly lower than in previous years. It is unclear if harvest has impacted this species over time, but it appears harvest is too low to impact the current population. Although the majority of anglers would support more restrictive harvest limits on channel catfish they do not appear necessary at this time. The current size structure of channel catfish has shifted slightly toward larger, older individuals which could be an indication of poor recruitment. Despite a decline in the population Pike Lake is still currently providing good opportunities for catfish anglers.

The C shift was effective at sampling catfish anglers at Pike Lake. Although the total amount of fishing pressure was low, more than half of catfish anglers fished during C shifts

(Table 13). Of these anglers less than 3% of their trips would have overlapped with the A shift time period, and therefore the majority of complete interviews would be drastically reduced without a C shift. As expected very few anglers fished overnight during the colder months, and in order for future surveys involving C shifts to be more efficient, the months of April and May could be excluded.

The walleye fishery at Pike Lake continues to provide good angling opportunity. The catch rate of age-0 and age-1 walleyes during fall evaluations continues to be greater than the Division of Fish and Wildlife criteria of 7 and 4.2 fish/h, respectively. The population also contains a good percentage of harvestable size fish, which includes some fish over 20 in. Overall angler harvest per acre and catch per hour by walleye anglers greatly exceeded the Division of Fish and Wildlife criteria of 1 walleye/acre and 0.1 walleye/h, respectively. The present economic value of walleye trips to Pike Lake, using a US Fish and Wildlife standard of $64 per trip in Indiana, was $92,000.

The Pike Lake walleye fishery is very comparable to the fishery at nearby Winona Lake, and in some respects it is better. Pike Lake had a greater overall angler harvest per acre and catch per hour by walleye anglers than Winona Lake, and growth is also comparable with the majority of walleyes reaching harvestable size during age 3 (Braun 2009). Winona Lake is currently stocked with 6 to 8 in advanced fingerling walleyes; where as Pike Lake is stocked with 1 to 2 in fingerlings. Winona Lake was originally stocked with 1 to 2 in fingerlings from 1987 to 1990 at a rate of 100 per acre, but the stockings failed to produce an acceptable fishery. Biologists continue to work to better understand which factors determine the success or failure of walleye stockings, but it is clear that good fishing can be provided with either 1 to 2 in fingerlings stocked in the spring or 6 to 8 in fingerlings stocked in the fall if conditions are favorable.

Submersed vegetation is not overly abundant at Pike Lake, and due to poor water clarity vegetation is completely absent at depths greater than 5 ft. Dissolved oxygen concentrations and secchi disk measurements are comparable to past surveys, which also document limited vegetation in the lake. Although Eurasian watermilfoil and curly-leaf pondweed are present they are not at nuisance levels.

The Pike Lake fishery is currently providing excellent fishing opportunities for Indiana anglers. Depending on the targeted species the lake can provide quantity and quality fishing

opportunities. This combined with the facilities provided by the City of Warsaw makes Pike Lake a prime destination for anglers.

## RECOMMENDATIONS

- The DFW should continue to stock Pike Lake with 1 to 2 in walleye fingerlings at a stocking rate of 50 fish/acre.

- Pike Lake is providing catfish angling opportunities that are not present in most natural lakes. In order to properly manage the fishery the DFW should continue to monitor the population in the future.

- Pike Lake residents and the City of Warsaw should seek funding to implement water quality improvement strategies outlined in the Pike Lake Feasibility Study (International Science and Technology Inc. 1990).

- Future creel surveys designed to target channel catfish anglers should include an overnight shift from June through September.

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Date: 12/22/2009

Table 1. Year, number, and average length (in) of stocked walleye at Pike Lake.

| Year | Number | Average Length |
|---|---|---|
| 1997 | 11,648 | 1.7 |
| 1998 | 26,270 | 1.5 |
| 1999 | 17,900 | 1.6 |
| 2000 | 11,890 | 1.4 |
| 2001 | 11,560 | 1.6 |
| 2002 | 11,400 | 1.2 |
| 2003 | 13,200 | 1.2 |
| 2004 | 13,500 | 1.3 |
| 2005 | 11,900 | 1.7 |
| 2006 | 12,000 | 1.5 |
| 2007 | 14,050 | 1.4 |
| 2008 | 11,625 | 2.1 |

Figure 1. Sampling gear locations at Pike Lake, Kosciusko County, Indiana in June and October 2008.

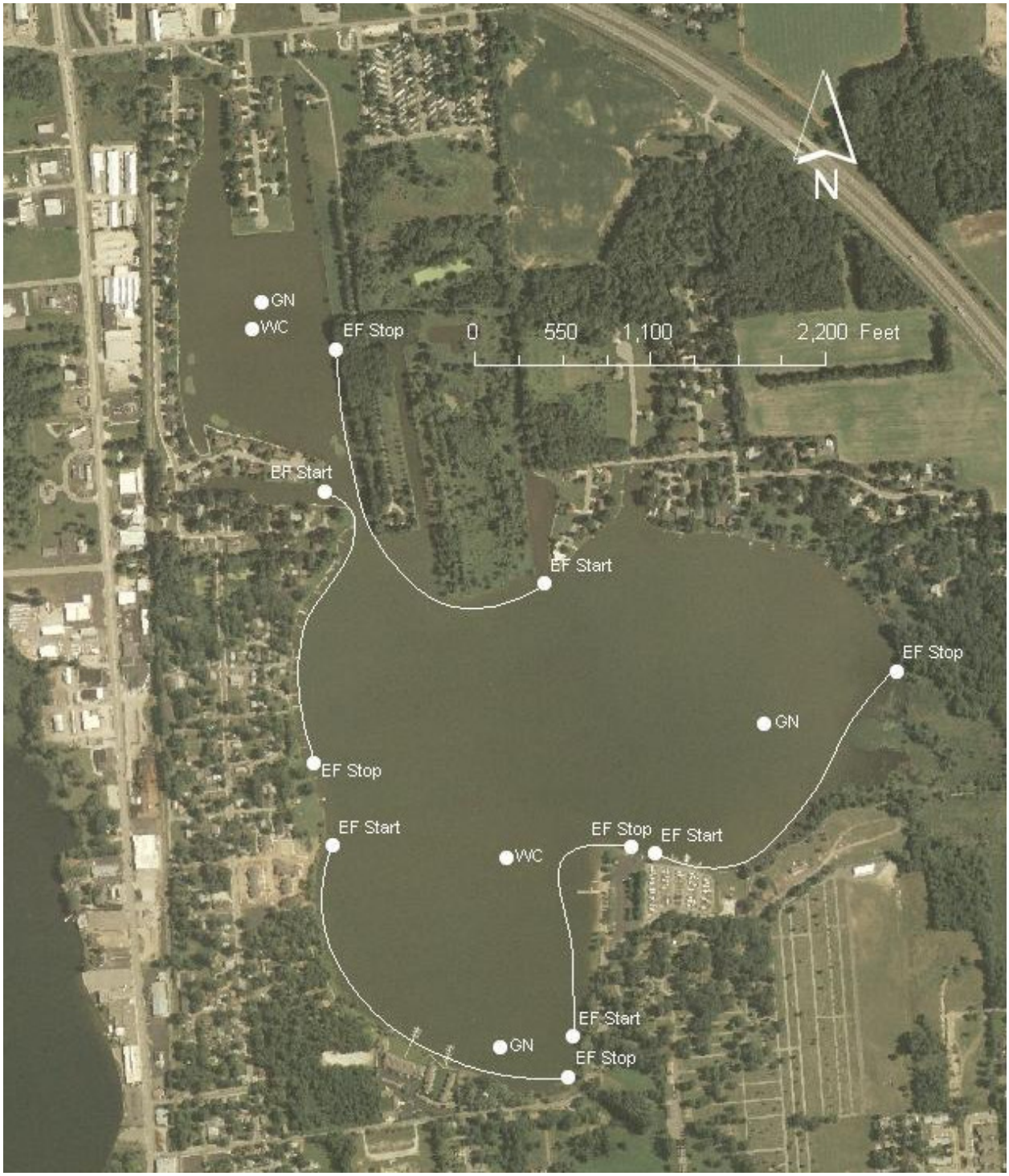

**Figure 2. Percent length frequency of channel catfish collected in gill nets at Pike Lake in 1995, 2000, 2005, and 2008.**

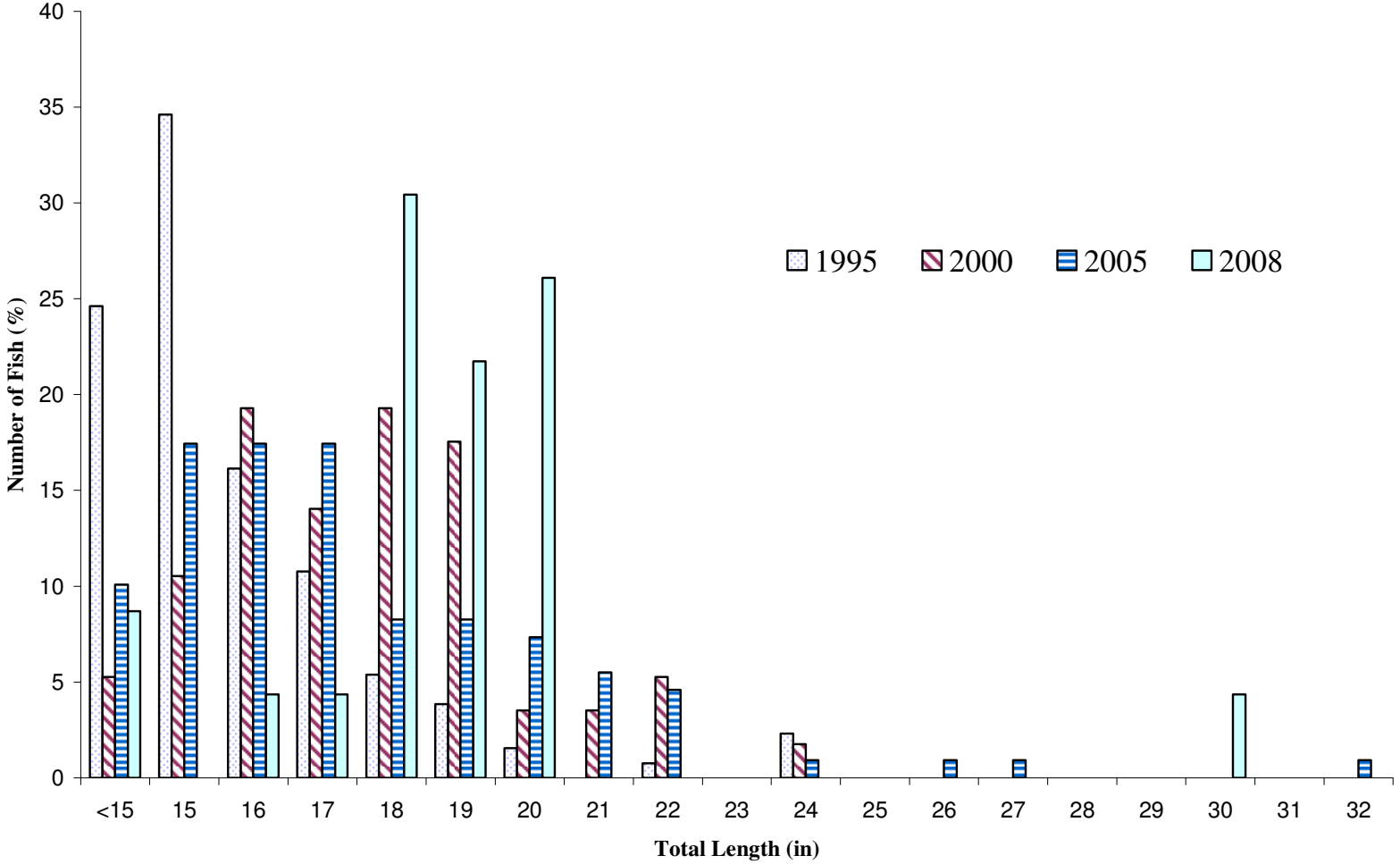

Table 2. Monthly angler harvest by species and angler effort at Pike Lake during 2008.

| Species | April | May | June | July | August | September | Total |
|---|---|---|---|---|---|---|---|
| Bluegill | 137 | 1,190 | 1,274 | 1,597 | 1,331 | 625 | 6,154 |
| Crappie | 419 | 745 | 220 | 160 | 817 | 100 | 2,461 |
| Walleye | 44 | 298 | 153 | 58 | 24 | 3 | 580 |
| White bass | 0 | 72 | 23 | 197 | 12 | 28 | 332 |
| Redear sunfish | 10 | 107 | 14 | 19 | 147 | 18 | 315 |
| Yellow perch | 0 | 95 | 51 | 77 | 17 | 37 | 277 |
| Channel catfish | 0 | 53 | 26 | 46 | 12 | 4 | 141 |
| Largemouth bass | 6 | 5 | 53 | 18 | 10 | 3 | 95 |
| Northern pike | 0 | 0 | 0 | 8 | 0 | 0 | 8 |
| Other | 0 | 42 | 15 | 5 | 9 | 0 | 71 |
| Total | 616 | 2,607 | 1,829 | 2,185 | 2,379 | 818 | 10,434 |
| Angler Hours | 1178 | 4305 | 6246 | 4344 | 3776 | 1842 | 21,691 |
| Shore Hours | 587 | 2587 | 3905 | 2090 | 2053 | 1108 | 12,330 |
| Boat Hours | 591 | 1719 | 2341 | 2254 | 1723 | 734 | 9,361 |

Table 3. Monthly angler harvest by species and angler effort during A and B shifts at Pike Lake during 2008.

| Species | April | May | June | July | August | September | Total |
|---|---|---|---|---|---|---|---|
| Bluegill | 137 | 1,187 | 1,244 | 1,597 | 1,331 | 625 | 6,121 |
| Crappie | 419 | 741 | 220 | 160 | 817 | 100 | 2,457 |
| Walleye | 44 | 295 | 153 | 58 | 24 | 3 | 577 |
| White bass | 0 | 72 | 23 | 197 | 12 | 28 | 332 |
| Redear sunfish | 10 | 107 | 14 | 19 | 147 | 18 | 315 |
| Yellow perch | 0 | 95 | 48 | 77 | 17 | 37 | 274 |
| Channel catfish | 0 | 53 | 23 | 46 | 12 | 4 | 138 |
| Largemouth bass | 6 | 5 | 53 | 18 | 10 | 3 | 95 |
| Northern pike | 0 | 0 | 0 | 8 | 0 | 0 | 8 |
| Other | 0 | 42 | 15 | 5 | 9 | 0 | 71 |
| Total | 616 | 2,597 | 1,793 | 2,185 | 2,379 | 818 | 10,388 |
| Angler Hours | 1139 | 4244 | 5937 | 4075 | 3497 | 1814 | 20,706 |
| Shore Hours | 562 | 2,532 | 3,656 | 1,956 | 1,847 | 1,079 | 11,632 |
| Boat Hours | 577 | 1,712 | 2,281 | 2,119 | 1,651 | 734 | 9,074 |

Table 4. Monthly angler harvest by species and angler effort during C shifts at Pike Lake during 2008.

| Species | April | May | June | July | August | September | Total |
|---|---|---|---|---|---|---|---|
| Bluegill | 0 | 3 | 30 | 0 | 0 | 0 | 33 |
| Crappie | 0 | 4 | 0 | 0 | 0 | 0 | 4 |
| Channel catfish | 0 | 0 | 3 | 0 | 0 | 0 | 3 |
| Walleye | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| Yellow perch | 0 | 0 | 3 | 0 | 0 | 0 | 3 |
| Total | 0 | 10 | 36 | 0 | 0 | 0 | 46 |
| Angler Hours | 38 | 61 | 309 | 269 | 279 | 29 | 985 |
| Shore Hours | 25 | 55 | 249 | 134 | 207 | 29 | 698 |
| Boat Hours | 13 | 6 | 60 | 135 | 72 | 0 | 287 |

Table 5. Total harvest by boat and shore anglers at Pike Lake during 2008.

| Species | Boat | Shore |
|---|---|---|
| Bluegill | 3,005 | 3,149 |
| Crappie | 2,013 | 448 |
| Walleye | 562 | 18 |
| White bass | 296 | 36 |
| Redear sunfish | 214 | 101 |
| Yellow perch | 120 | 157 |
| Channel catfish | 107 | 34 |
| Largemouth bass | 63 | 32 |
| Northern pike | 8 | 0 |
| Other | 19 | 52 |
| Total | 6,407 | 4,027 |

Table 6. Monthly angler harvest by species and angler effort during creel surveys at Pike Lake during 1995 and 2000.

| | | | | 1995 | | | | |
|---|---|---|---|---|---|---|---|---|
| Species | April | May | June | July | August | September | October | Total |
| Bluegill | 8 | 509 | 1,155 | 78 | 317 | 71 | 30 | 2,168 |
| Channel catfish | 1 | 122 | 106 | 75 | 69 | 80 | 31 | 484 |
| Crappie | 60 | 65 | 7 | 38 | 0 | 82 | 36 | 288 |
| Largemouth bass | 3 | 33 | 46 | 21 | 8 | 35 | 14 | 160 |
| Saugeye | 366 | 510 | 194 | 19 | 16 | 197 | 160 | 1,462 |
| White bass | 3 | 210 | 76 | 31 | 50 | 186 | 155 | 711 |
| Other | 31 | 71 | 140 | 36 | 33 | 35 | 31 | 377 |
| Total | 472 | 1,520 | 1,724 | 298 | 493 | 686 | 457 | 5,650 |
| Angler Hours | 1,281 | 2,604 | 2,608 | 1,794 | 1,127 | 1,301 | 925 | 11,639 |
| Shore Hours | 649 | 1,521 | 1,642 | 861 | 653 | 770 | 612 | 6,707 |
| Boat Hours | 632 | 1,082 | 966 | 933 | 474 | 532 | 314 | 4,932 |

| | | | | 2000 | | | |
|---|---|---|---|---|---|---|---|
| Species | April | May | June | July | August | September | Total |
| Bluegill | 8 | 71 | 54 | 35 | 46 | 144 | 358 |
| Channel catfish | 6 | 21 | 14 | 26 | 8 | 5 | 80 |
| Crappie | 0 | 4 | 0 | 13 | 14 | 6 | 37 |
| Largemouth bass | 3 | 10 | 2 | 3 | 0 | 0 | 18 |
| Walleye | 115 | 129 | 13 | 11 | 0 | 5 | 273 |
| White bass | 22 | 63 | 26 | 28 | 2 | 82 | 223 |
| Other | 3 | 10 | 0 | 0 | 0 | 5 | 18 |
| Total | 157 | 308 | 109 | 116 | 70 | 247 | 1,007 |
| Angler Hours | 1,963 | 2,285 | 1,204 | 2,088 | 1,013 | 669 | 9,221 |
| Shore Hours | 1,022 | 1,016 | 586 | 998 | 260 | 252 | 4,134 |
| Boat Hours | 941 | 1,269 | 619 | 1,090 | 753 | 416 | 5,087 |

Table 7. Monthly angler hours by fishing method and day type during all shifts at Pike Lake during 2008.

| | Boat Effort | | Shore Effort | | Total Effort | |
|---|---|---|---|---|---|---|
| Month | WD | WE | WD | WE | WD | WE |
| April | 385 | 205 | 304 | 283 | 690 | 488 |
| May | 623 | 1,096 | 1,040 | 1,546 | 1,663 | 2,642 |
| June | 1,164 | 1,176 | 1,673 | 2,232 | 2,838 | 3,408 |
| July | 1,039 | 1,216 | 1,227 | 862 | 2,266 | 2,078 |
| August | 793 | 929 | 1,125 | 928 | 1,918 | 1,858 |
| September | 375 | 359 | 671 | 437 | 1,045 | 797 |
| Total | 4,379 | 4,982 | 6,041 | 6,289 | 10,420 | 11,271 |
| Grand Total | 9,361 | | 12,330 | | 21,691 | |

WD=Weekday, WE=Weekend

Table 8. Distribution of party and angler numbers as well as the average amount of time for each fish trip by month at Pike Lake during 2008.

| | April | May | June | July | August | September | Total |
|---|---|---|---|---|---|---|---|
| Weekday Parties | 43 | 83 | 118 | 124 | 105 | 65 | 538 |
| Weekend Parties | 24 | 69 | 122 | 66 | 67 | 47 | 395 |
| Shore Parties | 41 | 111 | 172 | 119 | 120 | 77 | 640 |
| Boat Parties | 26 | 41 | 68 | 71 | 52 | 35 | 293 |
| Total Parties | 67 | 152 | 240 | 190 | 172 | 112 | 933 |
| | | | | | | | |
| Weekday Anglers | 67 | 137 | 232 | 219 | 176 | 98 | 929 |
| Weekend Anglers | 47 | 139 | 259 | 127 | 140 | 85 | 797 |
| Shore Anglers | 69 | 202 | 353 | 212 | 214 | 121 | 1171 |
| Boat Anglers | 45 | 74 | 138 | 134 | 102 | 62 | 555 |
| Total Anglers | 114 | 276 | 491 | 346 | 316 | 183 | 1726 |
| | | | | | | | |
| Weekday Average Trip | 2.64 | 2.20 | 2.60 | 2.80 | 2.53 | 2.78 | 2.59 |
| Weekend Average Trip | 2.53 | 3.35 | 3.06 | 3.15 | 2.83 | 2.75 | 3.02 |
| Shore Average Trip | 2.18 | 2.65 | 2.63 | 2.43 | 2.55 | 2.40 | 2.52 |
| Boat Average Trip | 3.16 | 2.94 | 3.15 | 3.80 | 2.85 | 3.65 | 3.26 |
| Total Average Trip | 2.60 | 2.73 | 2.81 | 2.93 | 2.65 | 2.77 | 2.77 |

Table 9. Distribution of party and angler numbers as well as the average amount of time for each fish trip by month during A and B shifts at Pike Lake during 2008.

| | April | May | June | July | August | September | Total |
|---|---|---|---|---|---|---|---|
| Weekday Parties | 38 | 80 | 104 | 109 | 96 | 61 | 488 |
| Weekend Parties | 23 | 65 | 115 | 62 | 55 | 46 | 366 |
| Shore Parties | 37 | 105 | 156 | 108 | 102 | 72 | 580 |
| Boat Parties | 24 | 40 | 63 | 63 | 49 | 35 | 274 |
| Total Parties | 61 | 145 | 219 | 171 | 151 | 107 | 854 |
| | | | | | | | |
| Weekday Anglers | 56 | 133 | 207 | 193 | 166 | 92 | 847 |
| Weekend Anglers | 45 | 134 | 246 | 122 | 107 | 84 | 738 |
| Shore Anglers | 60 | 195 | 323 | 194 | 177 | 114 | 1063 |
| Boat Anglers | 41 | 72 | 130 | 121 | 96 | 62 | 522 |
| Total Anglers | 101 | 267 | 453 | 315 | 273 | 176 | 1585 |
| | | | | | | | |
| Weekday Average Trip | 2.59 | 2.16 | 2.62 | 2.78 | 2.51 | 2.79 | 2.58 |
| Weekend Average Trip | 2.40 | 3.35 | 2.98 | 3.22 | 2.84 | 2.76 | 3.01 |
| Shore Average Trip | 2.09 | 2.62 | 2.63 | 2.46 | 2.54 | 2.39 | 2.52 |
| Boat Average Trip | 3.06 | 2.91 | 3.07 | 3.76 | 2.80 | 3.65 | 3.21 |
| Total Average Trip | 2.52 | 2.70 | 2.79 | 2.95 | 2.63 | 2.78 | 2.76 |

Table 10. Distribution of party and angler numbers as well as the average amount of time for each fish trip by month during C shifts at Pike Lake during 2008.

| | April | May | June | July | August | September | Total |
|---|---|---|---|---|---|---|---|
| Weekday Parties | 5 | 3 | 14 | 15 | 9 | 4 | 50 |
| Weekend Parties | 1 | 4 | 7 | 4 | 12 | 1 | 29 |
| Shore Parties | 4 | 6 | 16 | 11 | 18 | 5 | 60 |
| Boat Parties | 2 | 1 | 5 | 8 | 3 | 0 | 19 |
| Total Parties | 6 | 7 | 21 | 19 | 21 | 5 | 79 |
| | | | | | | | |
| Weekday Anglers | 11 | 4 | 25 | 26 | 10 | 6 | 82 |
| Weekend Anglers | 2 | 5 | 13 | 5 | 33 | 1 | 59 |
| Shore Anglers | 9 | 7 | 30 | 18 | 37 | 7 | 108 |
| Boat Anglers | 4 | 2 | 8 | 13 | 6 | 0 | 33 |
| Total Anglers | 13 | 9 | 38 | 31 | 43 | 7 | 141 |
| | | | | | | | |
| Weekday Average Trip | 2.95 | 5.50 | 2.40 | 3.06 | 3.00 | 2.63 | 2.82 |
| Weekend Average Trip | 4.75 | 3.38 | 4.81 | 1.75 | 2.78 | 2.25 | 3.16 |
| Shore Average Trip | 2.75 | 4.00 | 2.58 | 2.06 | 2.65 | 2.55 | 2.58 |
| Boat Average Trip | 4.25 | 4.25 | 4.83 | 4.42 | 3.50 | 0.00 | 4.25 |
| Total Average Trip | 3.25 | 4.08 | 3.00 | 2.70 | 2.85 | 2.55 | 2.95 |

Table 11. Length frequency and mean length of fish species harvested from Pike lake during 2008.

| Inches | Bluegill | Crappie | Redear sunfish | Largemouth bass | Walleye | Channel catfish | White bass | Yellow perch | Northern pike |
|---|---|---|---|---|---|---|---|---|---|
| 5.0 | 4 | | | | | | | | |
| 5.5 | 32 | | | | | | | | |
| 6.0 | 181 | | 2 | | | | | 4 | |
| 6.5 | 288 | | 4 | | | | | 4 | |
| 7.0 | 292 | 10 | 7 | | | | | 8 | |
| 7.5 | 206 | 27 | 10 | | | | | 3 | |
| 8.0 | 114 | 64 | 7 | | | | | 6 | |
| 8.5 | 55 | 88 | 5 | | | | | 8 | |
| 9.0 | 22 | 106 | 2 | | | | | 6 | |
| 9.5 | 8 | 85 | | | | | | 6 | |
| 10.0 | 2 | 33 | | | | | | 3 | |
| 10.5 | 2 | 8 | | | | | 1 | 2 | |
| 11.0 | | | | | | | 1 | 4 | |
| 11.5 | | | | | | | 3 | | |
| 12.0 | | | | | | 1 | 5 | | |
| 12.5 | | | | | | | 6 | | |
| 13.0 | | | | | | | 14 | | |
| 13.5 | | | | | | | 8 | | |
| 14.0 | | | | 7 | 19 | | 7 | | |
| 14.5 | | | | 7 | 7 | | 5 | | |
| 15.0 | | | | 3 | 6 | | 8 | | |
| 15.5 | | | | 2 | 11 | 1 | 2 | | |
| 16.0 | | | | | 17 | 1 | 1 | | |
| 16.5 | | | | | 3 | 1 | 1 | | |
| 17.0 | | | | | 3 | 1 | 1 | | |
| 17.5 | | | | | 7 | 2 | | | |
| 18.0 | | | | | 4 | | | | |
| 18.5 | | | | | 1 | 1 | | | |
| 19.0 | | | | | 1 | 3 | | | |
| 19.5 | | | | | | 2 | | | |
| 20.0 | | | | | | 1 | | | |
| 20.5 | | | | | | | | | |
| 21.0 | | | | | | | | | |
| 21.5 | | | | | | 2 | | | |
| 22.0 | | | | | | | | | |
| 22.5 | | | | | 1 | 1 | | | |
| 23.0 | | | | | 1 | 1 | | | |
| 23.5 | | | | | | 2 | | | |
| 24.0 | | | | | 1 | 1 | | | |
| 24.5 | | | | | 1 | | | | |
| 25.0 | | | | | | | | | |
| 25.5 | | | | | | 1 | | | |
| 26.0 | | | | | | | | | |
| 26.5 | | | | | | | | | |
| 27.0 | | | | | | 1 | | | |
| 27.5 | | | | | | | | | |
| 28.0 | | | | | | | | | 1 |
| 28.5 | | | | | | | | | |
| 29.0 | | | | | | | | | |
| 29.5 | | | | | | 1 | | | |
| 30.0 | | | | | | | | | |
| 30.5 | | | | | | | | | |
| 31.0 | | | | | | | | | |
| 31.5 | | | | | | | | | |
| 32.0 | | | | | | | | | |
| 32.5 | | | | | | | | | |
| 33.0 | | | | | | | | | |
| 33.5 | | | | | | | | | |
| 34.0 | | | | | | | | | |
| 34.5 | | | | | | | | | 1 |
| Mean Length | 7.0 | 9.0 | 7.5 | 14.5 | 16.0 | 20.5 | 13.5 | 8.5 | 31.5 |

Table 12. Monthly angler catch and release of legal and sub-legal walleyes at Pike Lake during 2008.

| Species | April | May | June | July | August | September | Total |
|---|---|---|---|---|---|---|---|
| Legal walleye | 12 | 75 | 6 | 8 | 26 | 0 | 127 |
| sub-legal walleye | 228 | 1,341 | 709 | 188 | 82 | 63 | 2,611 |
| Total | 240 | 1,416 | 715 | 196 | 108 | 63 | 2,738 |

Table 13. Monthly angler catch and release and harvest of channel catfish by all anglers, and channel catfish angler hours by creel shift at Pike Lake during 2008.

| | | | | Catch and Release | | | |
|---|---|---|---|---|---|---|---|
| Shift | April | May | June | July | August | September | Total |
| A & B Shift | 23 | 17 | 25 | 24 | 16 | 17 | 122 |
| C Shift | 1 | 9 | 15 | 13 | 30 | 8 | 76 |
| Total | 24 | 26 | 40 | 37 | 46 | 25 | 198 |
| | | | | Harvest | | | |
| A & B Shift | 0 | 53 | 23 | 46 | 12 | 4 | 138 |
| C Shift | 0 | 0 | 3 | 0 | 0 | 0 | 3 |
| Total | 0 | 53 | 26 | 46 | 12 | 4 | 141 |
| | | | | Channel Catfish Angler Hours | | | |
| A & B Shift | 5 | 25 | 28 | 34 | 47 | 35 | 173 |
| C Shift | 0 | 3 | 66 | 35 | 63 | 18 | 185 |
| Total | 5 | 27 | 94 | 69 | 110 | 53 | 358 |

Table 14. Number of anglers, interview hours, harvest, and catch and release by preference at Pike Lake during 2008.

| | | | Harvest | | | | | | | | | Released | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fishing preference | Anglers | Hours | Bluegill | Crappie | Walleye | White Bass | Redear | Perch | Channel catfish | Largemouth Bass | Pike | Walleye | Channel Catfish |
| Bluegill | 422 | 1,015.50 | 735 | 14 | 1 | 3 | 21 | 11 | 4 | 1 | 0 | 15 | 2 |
| Anything | 290 | 696.50 | 141 | 14 | 9 | 5 | 4 | 11 | 3 | 3 | 0 | 86 | 5 |
| Walleye | 172 | 599.00 | 34 | 27 | 53 | 13 | 0 | 14 | 5 | 1 | 1 | 238 | 4 |
| Channel catfish | 144 | 358.25 | 4 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 2 | 22 |
| Largemouth bass | 117 | 263.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 1 | 3 | 2 |
| Bluegill/Largemouth bass | 107 | 296.75 | 62 | 2 | 0 | 0 | 1 | 0 | 2 | 4 | 0 | 1 | 2 |
| Carp | 86 | 398.25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Bluegill/Walleye | 67 | 254.75 | 139 | 2 | 3 | 1 | 0 | 10 | 1 | 2 | 0 | 15 | 2 |
| Bluegill/Crappie | 60 | 142.75 | 70 | 78 | 0 | 0 | 10 | 1 | 0 | 0 | 0 | 8 | 0 |
| Crappie/Walleye | 53 | 146.75 | 9 | 51 | 12 | 2 | 0 | 1 | 0 | 0 | 0 | 39 | 0 |
| Other | 52 | 182.75 | 32 | 41 | 3 | 3 | 2 | 1 | 2 | 0 | 0 | 14 | 7 |
| Crappie | 44 | 118.75 | 5 | 178 | 0 | 1 | 13 | 0 | 0 | 0 | 0 | 9 | 0 |
| Bluegill/Channel catfish | 39 | 103.50 | 38 | 0 | 1 | 0 | 2 | 5 | 3 | 0 | 0 | 2 | 2 |
| White bass | 17 | 51.75 | 0 | 3 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Channel catfish/Walleye | 16 | 44.00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 |
| Northern pike | 15 | 31.50 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| Walleye/White bass | 13 | 57.00 | 0 | 2 | 0 | 13 | 0 | 0 | 1 | 0 | 0 | 11 | 0 |
| Largemouth bass/Walleye | 12 | 48.25 | 2 | 4 | 1 | 0 | 0 | 4 | 0 | 1 | 0 | 11 | 2 |

Table 15. Monthly angler preference at Pike Lake during 2008.

| Species | April | May | June | July | August | September | Total |
|---|---|---|---|---|---|---|---|
| Bluegill | 5 | 15 | 118 | 95 | 107 | 82 | 422 |
| Anything | 31 | 155 | 53 | 32 | 13 | 6 | 290 |
| Walleye | 32 | 33 | 52 | 20 | 19 | 16 | 172 |
| Channel catfish | 1 | 7 | 39 | 32 | 52 | 13 | 144 |
| Largemouth bass | 9 | 16 | 35 | 21 | 22 | 14 | 117 |
| Bluegill/Largemouth bass | 4 | 0 | 34 | 31 | 28 | 10 | 107 |
| Carp | 0 | 0 | 43 | 14 | 20 | 9 | 86 |
| Bluegill/Walleye | 0 | 2 | 44 | 16 | 5 | 0 | 67 |
| Bluegill/Crappie | 5 | 6 | 14 | 11 | 18 | 6 | 60 |
| Crappie/Walleye | 6 | 14 | 21 | 10 | 0 | 2 | 53 |
| Other | 8 | 2 | 13 | 19 | 10 | 0 | 52 |
| Crappie | 9 | 11 | 6 | 3 | 9 | 6 | 44 |
| Bluegill/Channel catfish | 0 | 2 | 11 | 15 | 4 | 7 | 39 |
| White bass | 0 | 0 | 0 | 12 | 0 | 5 | 17 |
| Channel catfish/Walleye | 2 | 3 | 7 | 3 | 1 | 0 | 16 |
| Northern pike | 0 | 1 | 1 | 6 | 7 | 0 | 15 |
| Walleye/White bass | 0 | 4 | 0 | 6 | 0 | 3 | 13 |
| Largemouth bass/Walleye | 2 | 5 | 0 | 0 | 1 | 4 | 12 |
| Total | 114 | 276 | 491 | 346 | 316 | 183 | 1,726 |

Table 16. Residency of anglers fishing at Pike Lake during 2008.

| County | Code | # of Interviews | Percentage |
|---|---|---|---|
| Kosciusko | 43 | 725 | 77.7 |
| Elkhart | 20 | 26 | 2.8 |
| Marshall | 50 | 22 | 2.4 |
| Whitley | 92 | 22 | 2.4 |
| Dubois | 25 | 19 | 2.0 |
| Marion | 49 | 19 | 2.0 |
| Starke | 75 | 15 | 1.6 |
| Allen | 2 | 13 | 1.4 |
| Wabash | 85 | 12 | 1.3 |
| Grant | 27 | 8 | 0.9 |
| Benton | 4 | 7 | 0.8 |
| Huntington | 35 | 5 | 0.5 |
| Blackford | 5 | 3 | 0.3 |
| Lake | 45 | 3 | 0.3 |
| Wells | 90 | 3 | 0.3 |
| Cass | 9 | 2 | 0.2 |
| LaPorte | 46 | 2 | 0.2 |
| Madison | 48 | 2 | 0.2 |
| Miami | 52 | 2 | 0.2 |
| Noble | 57 | 2 | 0.2 |
| Boone | 6 | 1 | 0.1 |
| Dekalb | 17 | 1 | 0.1 |
| Henry | 33 | 1 | 0.1 |
| Jasper | 37 | 1 | 0.1 |
| Jay | 38 | 1 | 0.1 |
| Porter | 64 | 1 | 0.1 |
| St. Joseph | 71 | 1 | 0.1 |
| Tipton | 80 | 1 | 0.1 |
| Wayne | 89 | 1 | 0.1 |
| White | 91 | 1 | 0.1 |
| Michigan | 93 | 2 | 0.2 |
| Other States | | 9 | 1.0 |
| Total | | 933 | |

Table 17. Angler response by preference when asked if the overall quality of fishing was improving, staying the same, or declining at Pike Lake during 2008.

| Species | Improving | Same | Declining | # of responses |
|---|---|---|---|---|
| Bluegill | 46 | 124 | 20 | 190 |
| Crappie | 6 | 12 | 4 | 22 |
| Northern pike | 0 | 7 | 1 | 8 |
| Largemouth bass | 13 | 35 | 9 | 57 |
| Walleye | 34 | 38 | 10 | 82 |
| Channel catfish | 20 | 27 | 7 | 54 |
| White bass | 1 | 7 | 4 | 12 |
| Carp | 2 | 18 | 30 | 50 |
| Anything | 25 | 54 | 22 | 101 |
| Bluegill/Largemouth bass | 8 | 25 | 2 | 35 |
| Bluegill/Crappie | 3 | 22 | 3 | 28 |
| Bluegill/Channel catfish | 3 | 12 | 1 | 16 |
| Largemouth bass/Walleye | 5 | 1 | 0 | 6 |
| Channel catfish/Walleye | 2 | 2 | 3 | 7 |
| Crappie/Walleye | 7 | 19 | 1 | 27 |
| Bluegill/Walleye | 5 | 25 | 0 | 30 |
| Walleye/White bass | 2 | 4 | 2 | 8 |
| Other | 5 | 14 | 0 | 19 |
| Percent | 25 | 59 | 16 | 100 |
| Total | 187 | 446 | 119 | 752 |

Table 18. Angler response by preference when asked if they would support more restrictive harvest limits on channel catfish at Pike Lake during 2008.

| Species | Yes | No | Undecided | # of responses |
|---|---|---|---|---|
| All combined | 530 | 160 | 148 | 838 |
| Channel catfish | 52 | 16 | 1 | 69 |
| Channel catfish/Walleye | 7 | 1 | 0 | 8 |
| Channel catfish/Bluegill | 14 | 4 | 0 | 18 |
| Total | 603 | 181 | 149 | 933 |

# Appendix
Lake Pages

## LAKE SURVEY REPORT

Type of Survey: [ ] Initial Survey [x] Re-Survey

| Lake Name | County | Date of survey (Month, day, year) |
|---|---|---|
| Pike Lake | Kosciusko | 30-Jun-2008 |
| Biologist's name | | Date of survey (Month, day, year) |
| Rod Edgell | | 1-Jul-2008 |

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

| ACCESSIBILITY | | | | | |
|---|---|---|---|---|---|
| State owned public access site | | | Privately owned public access site | | Other access site |
| | | | | | -owned park and boat ramp on south s |
| Surface acres | Maximum depth | Average depth | Acre feet | Water level | Extreme fluctuations |
| 230 | 35 ft | 13 ft | 2845 | 805 ft | 3 ft |
| Location of benchmark | | | | | |
| A gage is located on the west shore. Benchmark is on the south shore | | | | | |

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

| OUTLETS | |
|---|---|
| Name | Location |
| Long Ditch 2/3 mi to Tippecanoe River | North Shore of Little Pike |
| Water level control | |
| A concrete water-level control structure on Long Ditch | |

| POOL | ELEVATION (Feet MSL) | ACRES |
|---|---|---|
| TOP OF DAM | | |
| TOP OF FLOOD CONTROL POOL | | |
| TOP OF CONSERVATION POOL | | |
| TOP OF MINIMUM POOL | | |
| STREAMBED | | |

**Bottom type**

- [ ] Bolder
- [ ] Gravel
- [x] Sand
- [x] Muck
- [x] Clay
- [ ] 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 underdeveloped. Rest of shoreline has extensive residential development.

Previous surveys and investigations

General fisheries surveys: 1976, 1978, 1984, 1995, 2000, and 2005; creel surveys: 1995 and 2000

| SAMPLING EFFORT | | | | | |
|---|---|---|---|---|---|
| ELECTROFISHING | Day hours | | Night Hours | | Total Hours |
| | | | | | 0 |
| TRAP NETS | Number of Traps | | Number of Lifts | | Total Lifts |
| | | | | | 0 |
| GILL NETS | Number of Nets | | Number of Lifts | | Total Lifts |
| | 3 | | 1 | | 3 |
| ROTENONE | Gallons | ppm | Acre-feet Treated | SHORELINE SEINING | Number of 100 ft Seine Hauls |
| | | | | | |

| PHYSICAL AND CHEMICAL CHARACTERISTICS | | | | | | | |
|---|---|---|---|---|---|---|---|
| Color | Turbidity (Secchi Disk) | | | | Air Temperature | 75 | F |
| Green | 3 | Feet | 0 | Inches | Water temperature | 72.2 | F |
| Water Chemistri GPS Coordinates | N | 41.248614 | W | -85.843933 | | | |

| WATER QUALLITY 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 | 72.2 | 6.5 | 0.6 | 7.9 | 0.4 | 76.9 | | 52 | | | | | | | |
| 2 | 72.3 | 6.1 | 0.6 | 7.9 | 0.4 | 72.1 | | 54 | | | | | | | |
| 4 | 72.3 | 5.7 | 0.6 | 7.9 | 0.4 | 68.1 | | 56 | | | | | | | |
| 6 | 72.3 | 5.5 | 0.6 | 7.8 | 0.4 | 65.6 | | 58 | | | | | | | |
| 8 | 72.2 | 5.6 | 0.6 | 7.8 | 0.4 | 66.2 | | 60 | | | | | | | |
| 10 | 72.2 | 5.4 | 0.6 | 7.8 | 0.4 | 63.5 | | 62 | | | | | | | |
| 12 | 72.1 | 5.1 | 0.6 | 7.7 | 0.4 | 60.9 | | 64 | | | | | | | |
| 14 | 70.3 | 1.2 | 0.6 | 7.3 | 0.4 | 14.2 | | 66 | | | | | | | |
| 16 | 68.1 | 0.0 | 0.6 | 7.1 | 0.4 | 0.0 | | 68 | | | | | | | |
| 18 | 63.7 | 0.0 | 0.6 | 7.1 | 0.4 | 0.0 | | 70 | | | | | | | |
| 20 | 59.5 | 0.0 | 0.6 | 7.0 | 0.4 | 0.0 | | 72 | | | | | | | |
| 22 | 56.9 | 0.0 | 0.6 | 6.9 | 0.4 | 0.0 | | 74 | | | | | | | |
| 24 | 54.9 | 0.0 | 0.6 | 6.9 | 0.4 | 0.0 | | 76 | | | | | | | |
| 26 | 54.3 | 0.0 | 0.6 | 6.9 | 0.4 | 0.0 | | 78 | | | | | | | |
| 28 | 53.9 | 0.0 | 0.6 | 6.8 | 0.4 | 0.0 | | 80 | | | | | | | |
| 30 | 52.9 | 0.0 | 0.6 | 6.8 | 0.4 | 0.0 | | 82 | | | | | | | |
| 30.8 | 52.8 | 0.0 | 0.6 | 6.8 | 0.4 | 0.0 | | 84 | | | | | | | |
| 34 | | | | | | | | 86 | | | | | | | |
| 36 | | | | | | | | 88 | | | | | | | |
| 38 | | | | | | | | 90 | | | | | | | |
| 40 | | | | | | | | 92 | | | | | | | |
| 42 | | | | | | | | 94 | | | | | | | |
| 44 | | | | | | | | 96 | | | | | | | |
| 46 | | | | | | | | 98 | | | | | | | |
| 48 | | | | | | | | 100 | | | | | | | |
| 50 | | | | | | | | | | | | | | | |

| COMMENTS |
|---|
| C=(F-32)*0.5555 |

| SAMPLING EFFORT | | | | | |
|---|---|---|---|---|---|
| ELECTROFISHING | Day hours | | Night Hours | | Total Hours 0 |
| TRAP NETS | Number of Traps | | Number of Lifts | | Total Lifts 0 |
| GILL NETS | Number of Nets | | Number of Lifts | | Total Lifts 0 |
| ROTENONE | Gallons | ppm | Acre-feet Treated | SHORELINE SEINING | Number of 100 ft Seine Hauls |

Water Quality Little Pike Lake

| PHYSICAL AND CHEMICAL CHARACTERISTICS | | | | | | | |
|---|---|---|---|---|---|---|---|
| Color | Turbidity (Secchi Disk) | | | | Air Temperature | 75 | F |
| Green | 2 | Feet | 0 | Inches | Water temperature | 73 | F |
| Water Chemistri GPS Coordinates | N | 41.258442 | W | -85.848434 | | | |

| WATER QUALLITY 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 | 73.0 | 5.9 | 0.6 | 7.9 | 0.4 | 70.5 | | 52 | | | | | | | |
| 2 | 73.0 | 5.6 | 0.6 | 7.9 | 0.4 | 67.1 | | 54 | | | | | | | |
| 4 | 73.0 | 5.4 | 0.6 | 7.9 | 0.4 | 65.3 | | 56 | | | | | | | |
| 6 | 73.0 | 5.3 | 0.6 | 7.8 | 0.4 | 63.5 | | 58 | | | | | | | |
| 8 | 73.0 | 5.3 | 0.6 | 7.8 | 0.4 | 63.7 | | 60 | | | | | | | |
| 9.7 | 73.0 | 5.0 | 0.6 | 7.8 | 0.4 | 59.8 | | 62 | | | | | | | |
| 12 | | | | | | | | 64 | | | | | | | |
| 14 | | | | | | | | 66 | | | | | | | |
| 16 | | | | | | | | 68 | | | | | | | |
| 18 | | | | | | | | 70 | | | | | | | |
| 20 | | | | | | | | 72 | | | | | | | |
| 22 | | | | | | | | 74 | | | | | | | |
| 24 | | | | | | | | 76 | | | | | | | |
| 26 | | | | | | | | 78 | | | | | | | |
| 28 | | | | | | | | 80 | | | | | | | |
| 30 | | | | | | | | 82 | | | | | | | |
| 32 | | | | | | | | 84 | | | | | | | |
| 34 | | | | | | | | 86 | | | | | | | |
| 36 | | | | | | | | 88 | | | | | | | |
| 38 | | | | | | | | 90 | | | | | | | |
| 40 | | | | | | | | 92 | | | | | | | |
| 42 | | | | | | | | 94 | | | | | | | |
| 44 | | | | | | | | 96 | | | | | | | |
| 46 | | | | | | | | 98 | | | | | | | |
| 48 | | | | | | | | 100 | | | | | | | |
| 50 | | | | | | | | | | | | | | | |

| COMMENTS |
|---|
| C=(F-32)*0.5555 |

## Occurrence and Abundance of Submersed Aquatic Plants - Overall

| | | |
|---|---|---|
| Lake: Pike Lake | Secchi(ft): 3.0 | SE Mean species / site: 0.23 |
| Date: 7/29/2008 | Littoral sites with plants: 17 | Mean natives / site: 0.87 |
| Littoral Depth (ft): 5.0 | Number of species: 11 | SE Mean natives / site: 0.21 |
| Littoral Sites: 18 | Maximum species / site: 7 | Species diversity: 0.88 |
| Total Sites: 60 | Mean species / site: 0.95 | Native diversity: 0.87 |

| | Frequency of | Score Frequency | | | | |
|---|---|---|---|---|---|---|
| **Species** | **Occurrence** | **0** | **1** | **3** | **5** | **Dominance** |
| Sago pondweed | 13.3 | 86.7 | 6.7 | 6.7 | 0.0 | 5.3 |
| Slender naiad | 13.3 | 86.7 | 10.0 | 3.3 | 0.0 | 4.0 |
| Chara sp. | 13.3 | 86.7 | 13.3 | 0.0 | 0.0 | 2.7 |
| Leafy pondweed | 13.3 | 86.7 | 13.3 | 0.0 | 0.0 | 2.7 |
| Southern naiad | 13.3 | 86.7 | 13.3 | 0.0 | 0.0 | 2.7 |
| Brittle naiad | 8.3 | 91.7 | 8.3 | 0.0 | 0.0 | 1.7 |
| Coontail | 5.0 | 95.0 | 5.0 | 0.0 | 0.0 | 1.0 |
| Elodea | 5.0 | 95.0 | 5.0 | 0.0 | 0.0 | 1.0 |
| Eurasian watermilfoil | 5.0 | 95.0 | 5.0 | 0.0 | 0.0 | 1.0 |
| Curly-leaf pondweed | 3.3 | 96.7 | 3.3 | 0.0 | 0.0 | 0.7 |
| Water stargrass | 1.7 | 98.3 | 1.7 | 0.0 | 0.0 | 0.3 |
| | | | | | | |
| Filamentous Algae | 0.0 | | | | | |

Other species noted:

## Occurrence and Abundance of Submersed Aquatic Plants - 0 to 5 ft.

| | | |
|---|---|---|
| Lake: Pike Lake | Secchi(ft): 3.0 | SE Mean species / site: 0.45 |
| Date: 7/29/2008 | Littoral sites with plants: 17 | Mean natives / site: 2.89 |
| Littoral Depth (ft): 5.0 | Number of species: 11 | SE Mean natives / site: 0.43 |
| Littoral Sites: 18 | Maximum species / site: 7 | Species diversity: 0.88 |
| Total Sites: 18 | Mean species / site: 3.17 | Native diversity: 0.87 |

| | Frequency of | Score Frequency | | | | |
|---|---|---|---|---|---|---|
| **Species** | **Occurrence** | **0** | **1** | **3** | **5** | **Dominance** |
| Sago pondweed | 44.4 | 55.6 | 22.2 | 22.2 | 0.0 | 17.8 |
| Slender naiad | 44.4 | 55.6 | 33.3 | 11.1 | 0.0 | 13.3 |
| Chara sp. | 44.4 | 55.6 | 44.4 | 0.0 | 0.0 | 8.9 |
| Leafy pondweed | 44.4 | 55.6 | 44.4 | 0.0 | 0.0 | 8.9 |
| Southern naiad | 44.4 | 55.6 | 44.4 | 0.0 | 0.0 | 8.9 |
| Brittle naiad | 27.8 | 72.2 | 27.8 | 0.0 | 0.0 | 5.6 |
| Coontail | 16.7 | 83.3 | 16.7 | 0.0 | 0.0 | 3.3 |
| Elodea | 16.7 | 83.3 | 16.7 | 0.0 | 0.0 | 3.3 |
| Eurasian watermilfoil | 16.7 | 83.3 | 16.7 | 0.0 | 0.0 | 3.3 |
| Curly-leaf pondweed | 11.1 | 88.9 | 11.1 | 0.0 | 0.0 | 2.2 |
| Water stargrass | 5.6 | 94.4 | 5.6 | 0.0 | 0.0 | 1.1 |
| Filamentous Algae | 0.0 | | | | | |

Other species noted:

**SPECIES AND RELATIVE ABUNDANCE OF FISHES COLLECTED BY NUMBER AND WEIGHT**

| *COMMON NAME OF FISH | NUMBER | PERCENT | LENGTH RANGE (inches) minimum | LENGTH RANGE (inches) maximum | WEIGHT (pounds) | PERCENT |
|---|---|---|---|---|---|---|
| Black crappie | 29 | 36.3 | 4.6 | 10.4 | 7.07 | 8.4 |
| Channel catfish | 23 | 28.8 | 13.1 | 30.6 | 58.80 | 69.6 |
| Walleye | 11 | 13.8 | 9.7 | 21.9 | 11.97 | 14.2 |
| Yellow perch | 6 | 7.5 | 6.2 | 8 | 0.84 | 1.0 |
| White crappie | 6 | 7.5 | 5.6 | 10.7 | 1.82 | 2.2 |
| White bass | 5 | 6.3 | 11.2 | 13.5 | 3.97 | 4.7 |
| Total | 80 | 100.0 | | | 84.47 | 100.0 |

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

| | | | |
|---|---|---|---|
| **Lake:** | Pike Lake | | |
| **Date:** | 6/30/2008 | to | 7/1/2008 |
| **Species:** | Black crappie | | |
| **Total number:** | 29 | | |
| **Total weight:** | 7.07 | | |
| **Length range:** | 4.6 | to | 10.4 |

| | **TN** | **GN** | **EF** |
|---|---|---|---|
| Total # | 0 | 29 | 0 |
| Effort | 0 | 3 | 0 |
| CPUE | 0 | 10 | 0 |

| **Group** | **TL (in)** | **TN** | **GN** | **EF** | **TOTAL** | **RSD** |
|---|---|---|---|---|---|---|
| Stock | 5 | 0 | 25 | 0 | 25 | - |
| Quality | 8 | 0 | 12 | 0 | 12 | |
| Preferred | 10 | 0 | 1 | 0 | 1 | |
| Memorable | 12 | 0 | 0 | 0 | 0 | |
| Trophy | 15 | 0 | 0 | 0 | 0 | |

| Length group (in) | # | Mean weight (lbs) | Length group (in) | # | Mean weight (lbs) | Length group (in) | # | Mean weight (lbs) |
|---|---|---|---|---|---|---|---|---|
| 1.0 | | | 17.5 | | | 34.0 | | |
| 1.5 | | | 18.0 | | | 34.5 | | |
| 2.0 | | | 18.5 | | | 35.0 | | |
| 2.5 | | | 19.0 | | | 35.5 | | |
| 3.0 | | | 19.5 | | | 36.0 | | |
| 3.5 | | | 20.0 | | | 36.5 | | |
| 4.0 | | | 20.5 | | | 37.0 | | |
| 4.5 | 4 | 0.04 | 21.0 | | | 37.5 | | |
| 5.0 | 5 | 0.07 | 21.5 | | | 38.0 | | |
| 5.5 | 2 | 0.05 | 22.0 | | | 38.5 | | |
| 6.0 | | | 22.5 | | | 39.0 | | |
| 6.5 | | | 23.0 | | | 39.5 | | |
| 7.0 | 1 | 0.24 | 23.5 | | | 40.0 | | |
| 7.5 | 5 | 0.33 | 24.0 | | | 40.5 | | |
| 8.0 | 6 | 0.36 | 24.5 | | | 41.0 | | |
| 8.5 | 4 | 0.36 | 25.0 | | | 41.5 | | |
| 9.0 | 1 | 0.40 | 25.5 | | | 42.0 | | |
| 9.5 | | | 26.0 | | | 42.5 | | |
| 10.0 | 1 | 0.60 | 26.5 | | | 43.0 | | |
| 10.5 | | | 27.0 | | | 43.5 | | |
| 11.0 | | | 27.5 | | | 44.0 | | |
| 11.5 | | | 28.0 | | | 44.5 | | |
| 12.0 | | | 28.5 | | | 45.0 | | |
| 12.5 | | | 29.0 | | | 45.5 | | |
| 13.0 | | | 29.5 | | | 46.0 | | |
| 13.5 | | | 30.0 | | | 46.5 | | |
| 14.0 | | | 30.5 | | | 47.0 | | |
| 14.5 | | | 31.0 | | | 47.5 | | |
| 15.0 | | | 31.5 | | | 48.0 | | |
| 15.5 | | | 32.0 | | | 48.5 | | |
| 16.0 | | | 32.5 | | | 49.0 | | |
| 16.5 | | | 33.0 | | | 49.5 | | |
| 17.0 | | | 33.5 | | | 50.0 | | |

| | | | | | TN | GN | EF |
|---|---|---|---|---|---|---|---|
| **Lake:** | Pike Lake | | | Total # | 0 | 23 | 0 |
| **Date:** | 6/30/2008 | to | 7/1/2008 | Effort | 0 | 3 | 0 |
| **Species:** | Channel catfish | | | CPUE | 0 | 8 | 0 |
| **Total number:** | 23 | | | | | | |
| **Total weight:** | 58.8 | | | | | | |
| **Length range:** | 13.1 | to | 30.6 | | | | |

| Group | TL (in) | TN | GN | EF | TOTAL | RSD |
|---|---|---|---|---|---|---|
| Stock | 11 | 0 | 23 | 0 | 23 | - |
| Quality | 16 | 0 | 21 | 0 | 21 | |
| Preferred | 24 | 0 | 1 | 0 | 1 | |
| Memorable | 28 | 0 | 1 | 0 | 1 | |
| Trophy | 36 | 0 | 0 | 0 | 0 | |

| Length group (in) | # | Mean weight (lbs) | Length group (in) | # | Mean weight (lbs) | Length group (in) | # | Mean weight (lbs) |
|---|---|---|---|---|---|---|---|---|
| 1.0 | | | 17.5 | 1 | 1.76 | 34.0 | | |
| 1.5 | | | 18.0 | 2 | 2.02 | 34.5 | | |
| 2.0 | | | 18.5 | 5 | 2.19 | 35.0 | | |
| 2.5 | | | 19.0 | 3 | 2.26 | 35.5 | | |
| 3.0 | | | 19.5 | 2 | 2.19 | 36.0 | | |
| 3.5 | | | 20.0 | 3 | 2.45 | 36.5 | | |
| 4.0 | | | 20.5 | 3 | 2.62 | 37.0 | | |
| 4.5 | | | 21.0 | | | 37.5 | | |
| 5.0 | | | 21.5 | | | 38.0 | | |
| 5.5 | | | 22.0 | | | 38.5 | | |
| 6.0 | | | 22.5 | | | 39.0 | | |
| 6.5 | | | 23.0 | | | 39.5 | | |
| 7.0 | | | 23.5 | | | 40.0 | | |
| 7.5 | | | 24.0 | | | 40.5 | | |
| 8.0 | | | 24.5 | | | 41.0 | | |
| 8.5 | | | 25.0 | | | 41.5 | | |
| 9.0 | | | 25.5 | | | 42.0 | | |
| 9.5 | | | 26.0 | | | 42.5 | | |
| 10.0 | | | 26.5 | | | 43.0 | | |
| 10.5 | | | 27.0 | | | 43.5 | | |
| 11.0 | | | 27.5 | | | 44.0 | | |
| 11.5 | | | 28.0 | | | 44.5 | | |
| 12.0 | | | 28.5 | | | 45.0 | | |
| 12.5 | | | 29.0 | | | 45.5 | | |
| 13.0 | 1 | 0.65 | 29.5 | | | 46.0 | | |
| 13.5 | | | 30.0 | | | 46.5 | | |
| 14.0 | 1 | 0.82 | 30.5 | 1 | 13.00 | 47.0 | | |
| 14.5 | | | 31.0 | | | 47.5 | | |
| 15.0 | | | 31.5 | | | 48.0 | | |
| 15.5 | | | 32.0 | | | 48.5 | | |
| 16.0 | 1 | 1.22 | 32.5 | | | 49.0 | | |
| 16.5 | | | 33.0 | | | 49.5 | | |
| 17.0 | | | 33.5 | | | 50.0 | | |

| | | | | | TN | GN | EF |
|---|---|---|---|---|---|---|---|
| **Lake:** | Pike Lake | | | Total # | 0 | 11 | 0 |
| **Date:** | 6/30/2008 | to | 7/1/2008 | Effort | 0 | 3 | 0 |
| **Species:** | Walleye | | | CPUE | 0 | 3 | 0 |
| **Total number:** | 11 | | | | | | |
| **Total weight:** | 11.97 | | | | | | |
| **Length range:** | 9.7 | to | 21.9 | | | | |

| Group | TL (in) | TN | GN | EF | TOTAL | RSD |
|---|---|---|---|---|---|---|
| Stock | 10 | 0 | 9 | 0 | 9 | - |
| Quality | 15 | 0 | 4 | 0 | 4 | |
| Preferred | 20 | 0 | 1 | 0 | 1 | |
| Memorable | 25 | 0 | 0 | 0 | 0 | |
| Trophy | 30 | 0 | 0 | 0 | 0 | |

| Length group (in) | # | Mean weight (lbs) | Length group (in) | # | Mean weight (lbs) | Length group (in) | # | Mean weight (lbs) |
|---|---|---|---|---|---|---|---|---|
| 1.0 | | | 17.5 | | | 34.0 | | |
| 1.5 | | | 18.0 | | | 34.5 | | |
| 2.0 | | | 18.5 | | | 35.0 | | |
| 2.5 | | | 19.0 | | | 35.5 | | |
| 3.0 | | | 19.5 | 1 | 2.41 | 36.0 | | |
| 3.5 | | | 20.0 | | | 36.5 | | |
| 4.0 | | | 20.5 | | | 37.0 | | |
| 4.5 | | | 21.0 | | | 37.5 | | |
| 5.0 | | | 21.5 | 1 | 3.75 | 38.0 | | |
| 5.5 | | | 22.0 | | | 38.5 | | |
| 6.0 | | | 22.5 | | | 39.0 | | |
| 6.5 | | | 23.0 | | | 39.5 | | |
| 7.0 | | | 23.5 | | | 40.0 | | |
| 7.5 | | | 24.0 | | | 40.5 | | |
| 8.0 | | | 24.5 | | | 41.0 | | |
| 8.5 | | | 25.0 | | | 41.5 | | |
| 9.0 | | | 25.5 | | | 42.0 | | |
| 9.5 | 1 | 0.25 | 26.0 | | | 42.5 | | |
| 10.0 | | | 26.5 | | | 43.0 | | |
| 10.5 | 1 | 0.36 | 27.0 | | | 43.5 | | |
| 11.0 | | | 27.5 | | | 44.0 | | |
| 11.5 | | | 28.0 | | | 44.5 | | |
| 12.0 | 1 | 0.56 | 28.5 | | | 45.0 | | |
| 12.5 | 1 | 0.55 | 29.0 | | | 45.5 | | |
| 13.0 | | | 29.5 | | | 46.0 | | |
| 13.5 | | | 30.0 | | | 46.5 | | |
| 14.0 | | | 30.5 | | | 47.0 | | |
| 14.5 | 2 | 0.89 | 31.0 | | | 47.5 | | |
| 15.0 | 1 | 1.05 | 31.5 | | | 48.0 | | |
| 15.5 | | | 32.0 | | | 48.5 | | |
| 16.0 | 1 | 1.26 | 32.5 | | | 49.0 | | |
| 16.5 | | | 33.0 | | | 49.5 | | |
| 17.0 | | | 33.5 | | | 50.0 | | |

| | | | | | TN | GN | EF |
|---|---|---|---|---|---|---|---|
| **Lake:** | Pike Lake | | | Total # | 0 | 0 | 199 |
| **Date:** | 10/16/2008 | to | 10/16/2008 | Effort | 0 | 0 | 1.25 |
| **Species:** | Walleye | | | CPUE | 0 | 0 | 159 |
| **Total number:** | 199 | | | | | | |
| **Total weight:** | 0 | | | | | | |
| **Length range:** | 7.3 | to | 21.7 | | | | |

| Group | TL (in) | TN | GN | EF | TOTAL | RSD |
|---|---|---|---|---|---|---|
| Stock | 10 | 0 | 0 | 86 | 86 | - |
| Quality | 15 | 0 | 0 | 8 | 8 | 9 |
| Preferred | 20 | 0 | 0 | 1 | 1 | 1 |
| Memorable | 25 | 0 | 0 | 0 | 0 | |
| Trophy | 30 | 0 | 0 | 0 | 0 | |

| Length group (in) | # | Mean weight (lbs) | Length group (in) | # | Mean weight (lbs) | Length group (in) | # | Mean weight (lbs) |
|---|---|---|---|---|---|---|---|---|
| 1.0 | | | 17.5 | | | 34.0 | | |
| 1.5 | | | 18.0 | | | 34.5 | | |
| 2.0 | | | 18.5 | | | 35.0 | | |
| 2.5 | | | 19.0 | | | 35.5 | | |
| 3.0 | | | 19.5 | 1 | | 36.0 | | |
| 3.5 | | | 20.0 | | | 36.5 | | |
| 4.0 | | | 20.5 | | | 37.0 | | |
| 4.5 | | | 21.0 | | | 37.5 | | |
| 5.0 | | | 21.5 | 1 | | 38.0 | | |
| 5.5 | | | 22.0 | | | 38.5 | | |
| 6.0 | | | 22.5 | | | 39.0 | | |
| 6.5 | | | 23.0 | | | 39.5 | | |
| 7.0 | 3 | | 23.5 | | | 40.0 | | |
| 7.5 | 12 | | 24.0 | | | 40.5 | | |
| 8.0 | 28 | | 24.5 | | | 41.0 | | |
| 8.5 | 37 | | 25.0 | | | 41.5 | | |
| 9.0 | 28 | | 25.5 | | | 42.0 | | |
| 9.5 | 5 | | 26.0 | | | 42.5 | | |
| 10.0 | 1 | | 26.5 | | | 43.0 | | |
| 10.5 | 5 | | 27.0 | | | 43.5 | | |
| 11.0 | 4 | | 27.5 | | | 44.0 | | |
| 11.5 | 16 | | 28.0 | | | 44.5 | | |
| 12.0 | 8 | | 28.5 | | | 45.0 | | |
| 12.5 | 13 | | 29.0 | | | 45.5 | | |
| 13.0 | 9 | | 29.5 | | | 46.0 | | |
| 13.5 | 7 | | 30.0 | | | 46.5 | | |
| 14.0 | 10 | | 30.5 | | | 47.0 | | |
| 14.5 | 5 | | 31.0 | | | 47.5 | | |
| 15.0 | 1 | | 31.5 | | | 48.0 | | |
| 15.5 | 3 | | 32.0 | | | 48.5 | | |
| 16.0 | | | 32.5 | | | 49.0 | | |
| 16.5 | 1 | | 33.0 | | | 49.5 | | |
| 17.0 | 1 | | 33.5 | | | 50.0 | | |

Back-calculated lengths-at-age for black crappies captured at Pike Lake, Kosciusko County, Indiana in June 2008.

| | | Age | | | |
|---|---|---|---|---|---|
| Year Class | # Aged | I | II | III | IV |
| 2007 | 10 | 3.4 | | | |
| | SD | 0.4 | | | |
| 2006 | 7 | 3.1 | 6.7 | | |
| | SD | 0.3 | 0.8 | | |
| 2005 | 9 | 3.2 | 5.4 | 7.2 | |
| | SD | 0.2 | 0.8 | 0.8 | |
| 2004 | 2 | 4.0 | 6.4 | 7.9 | 8.9 |
| | SD | 0.9 | 1.5 | 2.0 | 1.5 |
| Mean* | | 3.2 | 6.1 | 7.2 | |
| SD | | 0.3 | 0.8 | 0.8 | |

Age-length key for black crappies captured at Pike Lake, Kosciusko County, Indiana in June 2008.

| Length | # in | # (age) in | Age | | | |
|---|---|---|---|---|---|---|
| Group | sample | subsample | 1 | 2 | 3 | 4 |
| 4.5 | 4 | 3(1) | 4 | | | |
| 5.0 | 5 | 5(1) | 5 | | | |
| 5.5 | 2 | 2(1) | 2 | | | |
| 6.0 | | | | | | |
| 6.5 | | | | | | |
| 7.0 | 1 | 1(2) | | 1 | | |
| 7.5 | 5 | 2(2), 3(3) | | 2 | 3 | |
| 8.0 | 6 | 3(2), 3(3) | | 3 | 3 | |
| 8.5 | 4 | 1(2), 2(3), 1(4) | | 1 | 2 | 1 |
| 9.0 | 1 | 1(3) | | | 1 | |
| 9.5 | | | | | | |
| 10.0 | 1 | 1(4) | | | | 1 |
| Mean TL | | | 5.2 | 8.0 | 8.3 | 9.5 |
| SE | | | 0.1 | 0.2 | 0.2 | 0.8 |

Back-calculated lengths-at-age for channel catfish captured at Pike Lake, Kosciusko County, Indiana in June 2008.

| | | Age | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Year Class | # Aged | I | II | III | IV | V | VI | VII | VIII | IX |
| 2005 | 1 | 5.5 | 8.8 | 13.8 | | | | | | |
| | SD | | | | | | | | | |
| 2004 | 0 | | | | | | | | | |
| | SD | | | | | | | | | |
| 2003 | 1 | 6.1 | 8.4 | 11.3 | 14.0 | 16.0 | | | | |
| | SD | | | | | | | | | |
| 2002 | 0 | | | | | | | | | |
| | SD | | | | | | | | | |
| 2001 | 1 | 3.0 | 7.8 | 10.0 | 11.7 | 13.8 | 15.9 | 17.4 | | |
| | SD | | | | | | | | | |
| 2000 | 0 | | | | | | | | | |
| | SD | | | | | | | | | |
| 1999 | 15 | 4.3 | 7.4 | 9.5 | 11.2 | 13.2 | 14.9 | 16.3 | 17.9 | 19.1 |
| | SD | 0.7 | 1.2 | 1.0 | 1.0 | 1.2 | 1.2 | 1.1 | 0.8 | 0.8 |
| Mean* | | 4.3 | 7.4 | 9.5 | 11.2 | 13.2 | 14.9 | 16.3 | 17.9 | 19.1 |
| SD | | 0.7 | 1.2 | 1.0 | 1.0 | 1.2 | 1.2 | 1.1 | 0.8 | 0.8 |

Age-length key for channel catfish captured at Pike Lake, Kosciusko County, Indiana in June 2008.

| Length Group | # in sample | # (age) in subsample | Age | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 13.0 | 1 | | | | | | | | | | |
| 13.5 | | | | | | | | | | | |
| 14.0 | 1 | 1(3) | | | 1 | | | | | | |
| 14.5 | | | | | | | | | | | |
| 15.0 | | | | | | | | | | | |
| 15.5 | | | | | | | | | | | |
| 16.0 | 1 | 1(5) | | | | | 1 | | | | |
| 16.5 | | | | | | | | | | | |
| 17.0 | | | | | | | | | | | |
| 17.5 | 1 | 1(7) | | | | | | | 1 | | |
| 18.0 | 2 | 2(9) | | | | | | | | | 2 |
| 18.5 | 5 | 4(9) | | | | | | | | | 5 |
| 19.0 | 3 | 3(9) | | | | | | | | | 3 |
| 19.5 | 2 | 2(9) | | | | | | | | | 2 |
| 20.0 | 3 | 2(9) | | | | | | | | | 3 |
| 20.5 | 3 | 2(9) | | | | | | | | | 3 |
| Mean TL | | | | | 14.3 | | 16.3 | | 17.8 | | 19.5 |
| SE | | | | | | | | | | | 0.7 |

Back-calculated lengths-at-age for walleyes captured at Pike Lake, Kosciusko County, Indiana in June and October 2008.

| | | Age | | | | | |
|---|---|---|---|---|---|---|---|
| Year Class | # Aged | I | II | III | IV | V | VI |
| 2007 | 31 | 8.2 | | | | | |
| | SD | 1.6 | | | | | |
| 2006 | 20 | 8.1 | 11.7 | | | | |
| | SD | 0.6 | 1.0 | | | | |
| 2005 | 8 | 7.1 | 11.8 | 13.9 | | | |
| | SD | 1.7 | 1.1 | 1.0 | | | |
| 2004 | 3 | 9.5 | 13.2 | 15.4 | 18.0 | | |
| | SD | 1.1 | 0.6 | 1.7 | 3.8 | | |
| 2003 | 2 | 7.9 | 12.5 | 14.5 | 16.4 | 17.9 | |
| | SD | 2.2 | 3.7 | 1.6 | 0.2 | 1.6 | |
| 2002 | 2 | 9.5 | 14.2 | 16.1 | 17.5 | 19.5 | 20.4 |
| | SD | 2.2 | 1.3 | 0.6 | 0.3 | 0.8 | 1.3 |
| Mean* | | 7.8 | 11.7 | 13.9 | 18.0 | | |
| SD | | 1.3 | 1.0 | 1.0 | 3.8 | | |

Age-length key for walleye captured at Pike Lake, Kosciusko County, Indiana in June 2008.

| Length Group | # in sample | # (age) in subsample | Age | | | | |
|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 |
| 9.5 | 1 | 1(2) | | 1 | | | |
| 10.0 | | | | | | | |
| 10.5 | 1 | 1(1) | 1 | | | | |
| 11.0 | | | | | | | |
| 11.5 | | | | | | | |
| 12.0 | 1 | 1(2) | | 1 | | | |
| 12.5 | 1 | 1(3) | | | 1 | | |
| 13.0 | | | | | | | |
| 13.5 | | | | | | | |
| 14.0 | | | | | | | |
| 14.5 | 2 | 2(3) | | | 2 | | |
| 15.0 | 1 | 1(3) | | | 1 | | |
| 15.5 | | | | | | | |
| 16.0 | 1 | 1(3) | | | 1 | | |
| 16.5 | | | | | | | |
| 17.0 | | | | | | | |
| 17.5 | | | | | | | |
| 18.0 | | | | | | | |
| 18.5 | | | | | | | |
| 19.0 | | | | | | | |
| 19.5 | 1 | 1(5) | | | | | 1 |
| 20.0 | | | | | | | |
| 20.5 | | | | | | | |
| 21.0 | | | | | | | |
| 21.5 | 1 | 1(4) | | | | 1 | |
| Mean TL | | | 10.8 | 11.0 | 14.8 | 21.8 | 19.8 |
| SE | | | | 1.3 | 0.6 | | |

Age-length key for walleyes captured at Pike Lake, Kosciusko County, Indiana in October 2008.

| Length Group | # in sample | # (age) in subsample | Age | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 | 6 |
| 7.0 | 3 | 3(0) | | | | | | |
| 7.5 | 12 | 5(0) | | | | | | |
| 8.0 | 28 | 5(0) | | | | | | |
| 8.5 | 37 | 6(0), 3(1) | 12 | | | | | |
| 9.0 | 28 | 5(0) | | | | | | |
| 9.5 | 5 | 3(0), 1(1) | 1 | | | | | |
| 10.0 | 1 | 1(1) | 1 | | | | | |
| 10.5 | 5 | 5(1) | 5 | | | | | |
| 11.0 | 4 | 2(1), 1(2) | 3 | 1 | | | | |
| 11.5 | 16 | 5(1) | 16 | | | | | |
| 12.0 | 8 | 4(1), 1(2) | 6 | 2 | | | | |
| 12.5 | 13 | 2(1), 3(2) | 5 | 8 | | | | |
| 13.0 | 9 | 4(1), 1(2) | 7 | 2 | | | | |
| 13.5 | 7 | 1(1), 4(2) | 1 | 6 | | | | |
| 14.0 | 10 | 1(1), 4(2) | 2 | 8 | | | | |
| 14.5 | 5 | 1(1), 4(2) | 1 | 4 | | | | |
| 15.0 | 1 | 1(3) | | | 1 | | | |
| 15.5 | 3 | 2(3), 1(4) | | | 2 | 1 | | |
| 16.0 | | | | | | | | |
| 16.5 | 1 | 1(5) | | | | | 1 | |
| 17.0 | 1 | 1(4) | | | | 1 | | |
| 17.5 | | | | | | | | |
| 18.0 | | | | | | | | |
| 18.5 | | | | | | | | |
| 19.0 | | | | | | | | |
| 19.5 | 1 | 1(6) | | | | | | 1 |
| 20.0 | | | | | | | | |
| 20.5 | | | | | | | | |
| 21.0 | | | | | | | | |
| 21.5 | 1 | 1(6) | | | | | | 1 |
| Mean TL | | | 11.5 | 13.5 | 15.6 | 16.5 | 16.8 | 20.8 |
| SE | | | 0.2 | 0.2 | 0.2 | 0.8 | | 1.0 |

Locations of gill nets and electrofishing transects on Pike Lake, Kosciusko County, Indiana in June and October 2008.

| Gill Nets | | | | |
|---|---|---|---|---|
| 1 | N | 41.25844181 | W | -85.84843406 |
| 2 | N | 41.25055075 | W | -85.83784469 |
| 3 | N | 41.24540627 | W | -85.84443756 |

| Electrofishing Transects | | | | |
|---|---|---|---|---|
| Start | N | 41.24847472 | W | -85.84056982 |
| End | N | 41.25125349 | W | -85.83477088 |
| Start | N | 41.25323832 | W | -85.84254392 |
| End | N | 41.25753522 | W | -85.84682473 |
| Start | N | 41.25513196 | W | -85.84735044 |
| End | N | 41.2505132 | W | -85.84808537 |
| Start | N | 41.24907017 | W | -85.8478386 |
| End | N | 41.24478936 | W | -85.84293553 |
| Start | N | 41.24547601 | W | -85.84274241 |
| End | N | 41.24861956 | W | -85.84106871 |

# Appendix
Creel Pages

Monthly angler hours by fishing method and day type during A and B shifts at Pike Lake during 2008.

| | Boat Effort | | Shore Effort | | Total Effort | |
|---|---|---|---|---|---|---|
| Month | WD | WE | WD | WE | WD | WE |
| April | 380 | 198 | 279 | 283 | 659 | 481 |
| May | 623 | 1,090 | 1,001 | 1,531 | 1,623 | 2,620 |
| June | 1,121 | 1,160 | 1,555 | 2,101 | 2,676 | 3,261 |
| July | 920 | 1,199 | 1,119 | 837 | 2,039 | 2,036 |
| August | 793 | 857 | 1,062 | 785 | 1,855 | 1,642 |
| September | 375 | 359 | 645 | 434 | 1,020 | 793 |
| Total | 4,212 | 4,863 | 5,661 | 5,970 | 9,873 | 10,833 |
| Grand Total | 9,074 | | 11,632 | | 20,706 | |

WD=Weekday, WE=Weekend

Monthly angler hours by fishing method and day type during C shifts at Pike Lake during 2008.

| | Boat Effort | | Shore Effort | | Total Effort | |
|---|---|---|---|---|---|---|
| Month | WD | WE | WD | WE | WD | WE |
| April | 6 | 8 | 25 | 0 | 31 | 8 |
| May | 0 | 6 | 39 | 16 | 39 | 22 |
| June | 43 | 17 | 118 | 131 | 161 | 148 |
| July | 119 | 17 | 108 | 25 | 227 | 42 |
| August | 0 | 72 | 63 | 144 | 63 | 216 |
| September | 0 | 0 | 25 | 3 | 25 | 3 |
| Total | 168 | 119 | 379 | 319 | 547 | 438 |
| Grand Total | 287 | | 698 | | 985 | |

WD=Weekday, WE=Weekend