

Pike Lake  
Washington County  
2008 Walleye Survey  
by  
John E. Nelson  
Wisconsin DNR - Plymouth

## **SUMMARY**

We conducted a survey of the adult walleye population of Pike Lake during April 15-17, 2008 to measure the general abundance of walleye and to determine if natural reproduction was occurring. We caught 382 adult walleye at a rate of 63.7 adult walleye/net night, an extremely high catch rate. 79.1% of the fish were males as expected (females move into shallow water for a brief time). The adult walleye ranged in length from 13" to 25" with most (primarily males) in the 17" size group. Most males were likely 5 to 7 years old. Most females were likely 5 and 9 year old fish. According to age determination, most of the walleye were 8 to 9 years old. While the Pike Lake walleye appeared to grow more slowly than the statewide average, our age determinations were made using dorsal spines which are more accurate and generally yield older ages than do scales. The walleye population appeared to be abundant in spring 2008. While the 1999 and 2000 year classes dominated the adult walleye population, younger fish were present and some reproduction has occurred on a fairly consistent basis. I recommend that we monitor walleye natural reproduction on a regular basis with fall fingerling/yearling surveys every two years and a spring adult survey every fourth year. No stocking is needed at this time. No walleye stocking from outside sources should ever be considered.

## **INTRODUCTION AND METHODS**

Pike Lake is a 522 acre drainage lake in central Washington County. It has long been known as the premier walleye resource in Washington and surrounding counties. The lake has not been stocked with walleye since 1961 with the exception of fry stock-back from spawn taking operations in 1989, 1990, 1991, and 1992. Natural reproduction of walleye has been sufficient to produce a high quality walleye fishery in the lake.

We conducted a brief survey of the spawning walleye population in spring 2008 because of a general concern that natural reproduction of walleye in Pike Lake was poor in recent years. Our decision to conduct the survey was due to an apparent increase in the abundance of largemouth bass in the lake and angler complaints about the walleye sport fishery.

We placed three 3' fyke nets in suspected spawning areas on April 15. The nets had ¾" bar mesh. Two nets were located near the northeast corner of "Eagle Point" and the third was located approximately 200 yards north of the boat landing on the east shore. The nets were lifted on April 16<sup>th</sup> and 17<sup>th</sup> and were removed on the 17<sup>th</sup>. The water temperature was 45°F on both days.

We measured all of the walleye to the nearest inch and collected dorsal spine samples from a subset of the fish for age determinations. Ten fish were sampled from each inch group when possible.

## **RESULTS AND DISCUSSION**

We caught a total of 382 adult walleye in 6 net nights of effort at a rate of 63.7 walleye/net night. Of the catch, 302 (79.1%) were males and 80 (20.9%) were females. The size range was 13" to 25" (Figure 1). Most of the fish were in the 17" size group. Most of the males were in the 16" to 18" range in size. Those males were likely 5 to 7 years old. Females were most common at 17" and 21". The 17" females were likely 5 year old fish and the 21" females were likely 9 year old fish.

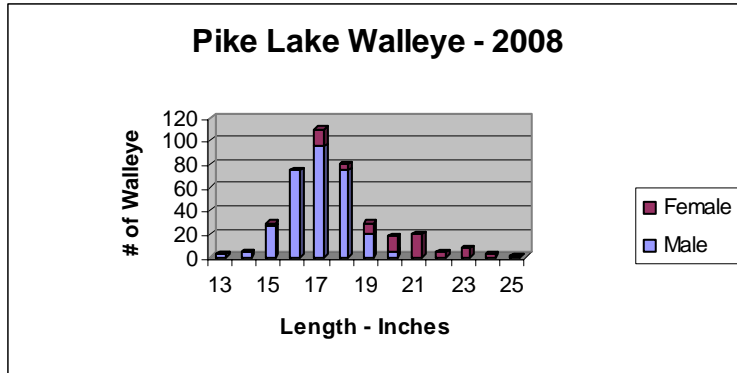


Figure 1. Length frequency distribution of adult walleye from Pike Lake, 2008.

According to our age determinations from reading dorsal spine cross sections, most of the adult walleye in Pike Lake were 8 and 9 year old fish (Figure 2). Those fish would have hatched in the years 1999 and 2000. Age 3 through 7 walleye were substantially less common in the catch. Male walleyes probably mature at age 3 in Pike Lake. Females probably begin to mature at age 4 and are fully mature at age 5 in the lake. Immature fish were not present in the shallow waters at the time of this survey and were thus not represented in the sample.

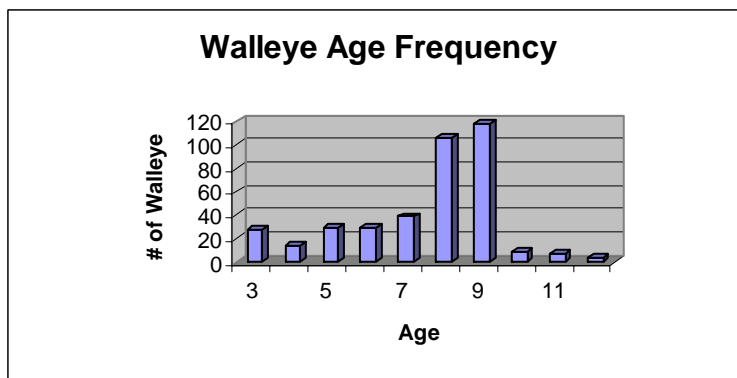


Figure 2. Walleye age frequency for Pike Lake adult walleye in spring, 2008.

The growth rate of Pike Lake walleye appeared to be below the statewide average (Table 1 and Figure 3). However, the statewide averages may be based primarily on age determinations using scales rather than spines. Research has found that age determinations with spines are generally far more accurate than scales and determine more years of age in general than do scales. Male walleyes grew at a much slower rate than females in Pike Lake as expected.

Table 1. Walleye length at age for Pike Lake, Spring 2008 (number of fish aged in parentheses)

Group/Age	3	4	5	6	7	8	9	10	11	12
Male	14.7" (7)	15.3" (3)	15.6" (5)	16.3" (3)	17.4" (5)	17.1" (9)	18.1" (15)	---	19.0" (2)	20.0" (2)
Female	---	---	---	20.0" (1)	21.0" (3)	20.2" (9)	21.1" (12)	22.2" (6)	23.0" (1)	---
Combined	14.7" (7)	15.3" (3)	15.6" (5)	17.3" (4)	18.8" (8)	18.7" (18)	19.4" (27)	22.2" (6)	20.3" (3)	20.0" (2)
State Ave.	12.0"	14.1"	16.1"	17.8"	19.3"	20.7"	21.8"	22.9"	23.8"	24.5"

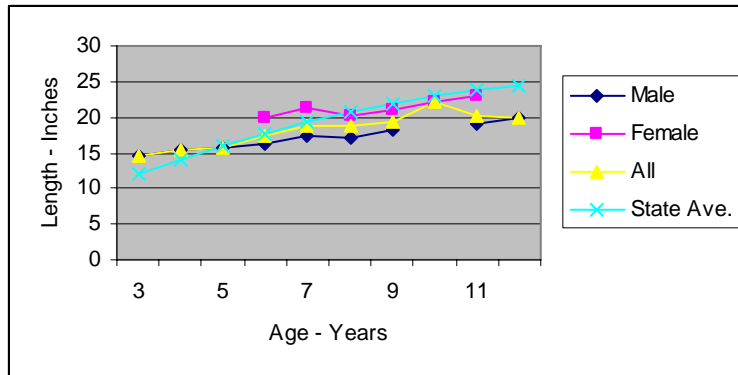


Figure 3. Walleye length at age for Pike Lake, Spring 2008 compared to statewide average length at age.

The very high catch rate we had for Pike Lake in Spring, 2008 was a good indication that the walleye population was high. The 2000 survey of the lake estimated a walleye population of 4.5 adult walleye/acre. The 2008 population was at least equal and likely greater than the 2000 population based on the extremely high catch rate in 2008.

Of concern is the finding that the adult population largely consisted of 8 and 9 year old walleye in 2008 (Figure 2). Walleye generally have quite inconsistent natural reproduction success and a few strong year classes may dominate a population for many years. The 1999 and 2000 year classes may have been exceptionally large, thus dominating the population through 2008. As those year classes fade from the fishery, another strong year class or classes is likely to take its place. Fortunately, it appears that there has been some level of natural reproduction every year.

### MANAGEMENT RECOMMENDATIONS

Pike Lake has an exceptionally important walleye population that requires fairly consistent monitoring. I recommend that fall electrofishing be conducted every two years to study the fingerling and yearling production. Spring adult surveys similar to this survey should be conducted every fourth year to monitor the adult population. Stocking is not needed at this time. If stocking of walleye were ever to take place, it should consist of stocking fry from eggs harvested from Pike Lake only. No stocking of walleye from outside sources should be allowed as Pike Lake may hold a specific strain that is best suited for the lake.

### NOTED AND APPROVED

\_\_\_\_\_  
Susan Beyler, Inland Fisheries Team Supervisor

\_\_\_\_\_  
Date