



NORTH LAKE, WASHTENAW COUNTY  
Bass Regulations Study  
October 20-23, 2008

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**Lake Description:**

North Lake is a 227-acre, natural lake located in northwestern Washtenaw County in the Pinckney Recreation Area. This lake is heavily developed with mainly permanent residences. The lake's bottom type from shore to approximately the 5-foot contour is mainly sand and marl. Despite this, there are extensive growths of submerged aquatic vegetation including some areas with dense stands of the exotic starry stonewort. The substrate of the deeper sections of the lake is composed of marl and pulpy peat. North Lake has a maximum depth of 58 feet and outlets through a culvert under North Lake Road on the northeast corner of the lake. There is a gravel ramp, public boat launch off North Lake Road also in the northeast section of the lake.

**History:**

Bluegills, largemouth bass and yellow perch were stocked in North Lake from the late 1930's to the mid-1940's. This practice was discontinued after research showed that it was not necessary to stock these species since adequate natural reproduction was occurring. Northern pike were stocked in 1960 but a follow-up survey resulted in the capture of no northerners.

A survey of this lake in June of 1985 indicated that the bluegill population was dominated by small and thin, slow-growing fish. As a result, a partial treatment of the lake with the chemical antimycin was proposed. Partial treatments with antimycin have been successful in the past, providing improved fishing for a number of years on lakes with slow growing panfish populations. The goal of the antimycin treatment is to selectively thin the stunted panfish populations without adversely affecting larger gamefish in the lake. Historically, selective thinning using this chemical has improved bluegill growth rates over time and the cost of the treatment is significantly less than a treatment using rotenone which would remove the entire fish population.

On May 3, 1988, a general survey of North Lake was made to determine the current status of the fishery. Results of this survey showed a significant improvement in average length of bluegills, pumpkinseeds, largemouth bass and black crappie. Because of these improvements, it was decided not to treat North Lake in 1988. In 1985, only 36% of the bluegills captured were of acceptable size to anglers (>6 inches). Over 80% of the bluegills caught during the 1988 survey were over 6-inches.

In early June of 1992, North Lake was surveyed again. Bluegill, crappie and largemouth bass all exhibited increases in average length, even though growth rates generally remained unchanged. Bluegills averaged 6.7 inches and nearly all of them (98%) were over 6 inches or what anglers consider to be "keeper" size. Largemouth bass are seldom caught with trap or gill nets, yet a total of 21 bass averaging over 13 inches were caught. A clear trend of improved fish average size was evident after the 1992 survey.

Because of the healthy pumpkinseed sunfish and snail population which exists in North Lake, and because of the improvement in the overall fishery since 1988, the introduction of redear sunfish was recommended. Redears were stocked in North Lake in 1991, 1992, and in 1993.



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**Survey Purpose and Methods:**

This sampling was conducted as the first part of a three-year study on the effect of early-season, catch and release bass fishing regulations. Sampling was done for four consecutive nights using a boomshocker. The entire lake shoreline was sampled each night with all largemouth bass measured, weighed, marked for population estimates, and either scale or spine samples were collected for growth analysis. Water temperatures during the sampling were fairly constant at 59-60<sup>0</sup>F. The full study results and analysis will be reported out in a separate publication. This report simply summarizes the basic catch data for the 2008 sampling period.

**Survey Results:**

A total of 711 largemouth bass were caught during the four sampling periods with 29 of these being recaptures from a previous sampling period. Sampling duration ranged from 2.11 to 2.33 hours each night for an overall electroshocking catch rate of 78 fish per hour or 47 fish per mile of shoreline (see Table 1 below). These catch rates are midway between those found at two other area lakes included in this study where comparable sampling was conducted (Woodland Lake and Lake Chemung, both in Livingston County).

Table 1. 2008 Catch and Population Statistics for Bass Study Lakes

<u>Lake</u>	<u>Distance (mi)</u>	<u>Time (hr)</u>	<u>CPE (mi)</u>	<u>CPE (hr)</u>	<u>Number/Acre</u>	<u>Pop. Est.</u>
Chemung (310 A)	24.98	13.78	22.85	41.43	9.17	2,844
North (227 A)	15.22	9.11	46.71	78.05	27.70	6,287
Woodland (290 A)	16.86	13.51	79.06	98.67	25.97	7,532

Population estimates were calculated using the Schumacher-Eschmeyer Method which looks at recaptures over multiple sampling days. The largemouth bass estimated population in North Lake was 6,287 adult bass (>9 inches) with 95% confidence limits ranging from 4,411 to 8,163. This equates to about 28 adult bass per acre of lake surface and is comparable to Woodland Lake, but much higher than the bass density found in Lake Chemung (see Table 1).

The bass ranged from 4 to over 19 inches in length with an overall average length of 10 inches and 114 (16%) exceeding the minimum legal size limit of 14 inches (see Length Frequency report for further details). Growth was only fair with a mean growth index 1.0 inches below the state average.

**Conclusions and Management Recommendations:**

Conclusions and management recommendations will be formulated after the third year (2010) of sampling has been analyzed.

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