

## **The Fish Community and Fishery of Peavy Pond, Iron County, Michigan in 2004-05 with Emphasis on Walleye and Northern Pike**

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### **Introduction**

The Michigan Department of Natural Resources (DNR), Fisheries Division surveyed fish populations and angler catch and effort at Peavy Pond, Iron County, Michigan from April 2004 through February 2005. This work was part of the Large Lakes Program, which is designed to improve assessment and monitoring of fish communities and fisheries in Michigan's largest inland lakes (Clark et al. 2004). The Large Lakes Program has three primary objectives. The first objective is to produce consistent indices of abundance and estimates of annual harvest and fishing effort for walleye *Sander vitreus*, northern pike *Esox lucius*, smallmouth bass *Micropterus dolomieu*, and muskellunge *Esox masquinongy*. Since these species support valuable fisheries, the second goal is to produce growth and mortality statistics to evaluate the effects of fishing on these species. This usually involves targeted sampling to collect, sample, and mark sufficient numbers of fish. The third goal is to evaluate the suitability of various statistical estimators for use in large lakes. For example, comparisons were made among four types of abundance and three types of exploitation rate estimators in this survey of Peavy Pond. The Large Lakes Program will maintain consistent sampling methods over lakes and time, which will allow the evaluation of differences in fish population and harvest statistics among lakes or changes within a lake over time. Peavy Pond was the fourteenth lake to be surveyed as part of the Large Lakes Program. However, since twenty lakes had been surveyed at the time the report was written, statistics from all surveyed lakes were used for comparison. The sample size for these types of comparisons varies throughout the report since some statistics could not be estimated for a lake and/or species.

### **Study Area**

Peavy Pond is an impoundment of the Michigamme River in Iron County, Michigan. The impoundment was created in 1943 when the Wisconsin-Michigan Light and Power Company [name changed to Wisconsin Electric Power Company (WEPC) and later to WE Energies] built Peavy Falls Dam. The purpose of the dam was to store spring runoff, and supplement low flows for power generation. The watershed of the reservoir is approximately 715 square miles. Reports of the reservoir surface area vary from source to source. Humphrys and Green (1962) estimated 2,673 acres, WEPC (1991) reported 2,794 acres at normal pool elevation (1,285.0 ft), WEPC (1999) reported 2,900 acres normal full surface area, and Breck (2004) reported 2,348 acres. The WEPC study examined satellite images taken on June 4, 1989 at normal pool elevation. Their methods provided spatial resolution of 65.6 ft, which resulted in the most accurate estimate of total surface area of 2,794 acres. In the Large Lakes Program, one goal is to compare various measures of productivity among lakes, such as number of fish per acre or harvest per acre, so an accurate measure of lake size is fairly important.