

The Fish Community and Fishery of the Portage-Torch Lake System, Houghton County, Michigan in 2007-08.

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Introduction

The Michigan Department of Natural Resources (DNR), Fisheries Division surveyed fish populations and angler catch and effort in Portage and Torch Lakes [henceforth referred to as the Portage-Torch lake system (PTLS)], Houghton County, Michigan from April 2007 through February 2008. This work was part of the Large Lakes Program, which is the assessment and monitoring program for 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 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*. The second objective is to produce growth and mortality statistics to evaluate the effects of fishing on these species. The third objective is to evaluate the suitability of various statistical estimators for use in large lakes. For example, comparisons were made among three types of abundance and three types of exploitation rate estimators in this survey of the PTLS. The Large Lakes Program maintains consistent sampling methods over lakes and time, which allows the evaluation of differences in fish population and harvest statistics among lakes or changes within a lake over time. The PTLS was the nineteenth waterbody surveyed under the protocols of the program. However, since twenty waterbodies had been surveyed at the time the report was written, statistics from all surveyed waterbodies 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 waterbody and/or species.