The Fish Community and Fishery of the Cisco Lake Chain, Gogebic County, Michigan and Vilas County, Wisconsin with Emphasis on Walleyes, Northern Pike, and Muskellunge

Patrick A. Hanchin

Michigan Department of Natural Resources, Charlevoix Fisheries Station,
96 Grant Street, Charlevoix, Michigan 49720

Brian J. Gunderman

Michigan Department of Natural Resources, Baraga Field Office,
427 US 41 North, Baraga, Michigan 49908

Richard D. Clark, Jr.

The University of Michigan, Institute for Fisheries Research,
Room 212 Museums Annex Building, Ann Arbor, Michigan 48109

Introduction

Michigan Department of Natural Resources (MDNR), Fisheries Division surveyed fish populations and angler catch and effort on the Cisco Lake Chain, Gogebic County, Michigan and Vilas County, Wisconsin from April 2002 through February 2003. This work was part of a statewide Large Lakes Program 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. First, we want to produce consistent indices of abundance and estimates of annual harvest and fishing effort for important fishes. Initially, important fishes are defined as species susceptible to trap or fyke nets and/or those readily harvested by anglers. Our goal is to produce statistics for important fishes to help detect major changes in their populations over time. Second, we want to produce abundance estimates, and sufficient growth and mortality statistics to be able to evaluate effects of fishing on special-interest species, which support valuable fisheries. This usually involves targeting special-interest species with nets or other gears to collect, sample, and mark sufficient numbers. We selected walleye *Sander vitreus*, northern pike *Esox lucius,* and muskellunge *Esox masquinongy* as special-interest species in this survey of the Cisco Lake Chain. Finally, we want to evaluate the suitability of various statistical estimators for use in large lakes. For example, we applied and compared three types of abundance and two types of exploitation rate estimators.

The Large Lakes Program will maintain consistent sampling methods over lakes and time. This will allow us to build a body of fish population and harvest statistics for direct evaluation of differences between lakes or changes within a lake over time. The Cisco Lake Chain is only the sixth lake to be sampled under the protocols of the program, thus, we were sometimes limited in our ability to make valid comparisons. Of course, as our program progresses we will eventually have a large body of netting data collected under the same conditions in the future.

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