

## ABSTRACT

Sportfishing catch and effort were sampled on lakes Michigan, Huron, Erie and Superior, and on several important river systems from April 1, 1987 through March 31, 1988. The objective of the creel census program was to obtain a continuous record of sport catch, catch rates, and catch composition for the Great Lakes and important anadromous river fisheries.

Over 88,000 anglers were sampled at the end of their fishing trips. Catch and effort estimates were calculated by month for all areas sampled. It was estimated that anglers spent 14,855,507 ( $\pm 609,785$  two standard errors) angler hours in all areas of Michigan's waters of the Great Lakes that were censused. Total angler effort for the Great Lakes and connecting waters which were sampled by mode of fishing was 84% boat, 6% pier, 6% ice, and 4% shore. Of the total angler hours during the open-water season 45% was spent on Lake Michigan and 32% on Lake Huron.

Total harvest was estimated to be over 10.6 million fish. Yellow perch were the most abundant species in the sport catch in most sample areas, totaling 7,329,815 ( $\pm 737,446$ ) fish. In addition, sport anglers harvested an estimated 1,133,145 ( $\pm 156,221$ ) walleye, 523,115 ( $\pm 65,331$ ) chinook salmon, 200,127 ( $\pm 31,620$ ) lake trout, 165,905 ( $\pm 28,206$ ) coho salmon, 95,371 ( $\pm 14,063$ ) rainbow trout, and 41,266 ( $\pm 7,246$ ) brown trout.

## INTRODUCTION

Michigan's Great Lakes sport fishery has been monitored with a statewide contact creel census program since 1983. The objective of the program is to obtain a continuous record of sport catch, catch rates, and catch composition for the Great Lakes and important anadromous river fisheries.

A fundamental requirement for sound management of the Great Lakes fisheries is knowledge of the response of fish stocks to fishing and the contributions of various fish stocks to the fisheries. The success and the future value of the Great Lakes and anadromous stream fisheries depend on the long-term consequences of current management. It is essential that management decisions be based on a sound empirical knowledge of the history, current status, and dynamics of the fish communities.

Fishing statistics are needed for stock assessment and to facilitate stock identification. Coupled with fish marking studies, these kinds of data can identify Great Lakes and anadromous fish stocks and determine their spatial distribution, movements, and contribution to various sport fisheries. In future years, data collected from this program could be used to develop, test, and improve decision models which will help to discern management strategies for Great Lakes fish communities and fisheries.

During the 1987 open-water fishing season, angler catch and effort were sampled on lakes Michigan, Huron, Erie, and Superior. In addition, the fisheries of several important anadromous rivers tributary to lakes Michigan and Huron were sampled. During the winter months of 1987-88, ice fisheries were sampled at several important locations on lakes Superior, Michigan, Huron, and Erie.

Michigan Department of Natural Resources (MDNR) Fisheries Division personnel interviewed over 88,000 anglers at the end of their fishing trips during the 1987 license year, April 1, 1987 through March 31, 1988. Approximately 81,000 of these anglers were contacted during the April through November open-water season. A total of 7,400 anglers was interviewed during the winter ice fishing season, January through March, 1988.

## STUDY AREA AND METHODS

In 1987 creel monitoring operations were conducted at two levels of intensity. In the most intensive creel census, the geographical area sampled per census worker was smaller than in a less intensive census. As a general rule, the most intensive creel census was designed such that the sampling area was no larger than could be covered in one 8-hour workday. The same sample area was then traversed 5 days per week. For the less intensive creel sampling operations, personnel were spread over a much broader area covering several ports or fishing