

INTRODUCTION

Fish managers have long used creel census as an effective method of evaluating fish populations and fisheries management programs. During 1986, fisheries personnel from the Pontiac District Office of the Michigan Department of Natural Resources carried out an intensive creel census on Orchard, Cass, Maceday-Lotus lakes. Maceday and Lotus lakes are so broadly connected that in this report they will be referred to as a single lake unit (Maceday-Lotus). Objectives of the creel census were to: (1) evaluate angler success, (2) determine angler pressure, (3) evaluate the benefits of current stocking programs in the lakes, and (4) assess the potential for improving fishing opportunities in the lakes.

Orchard, Cass, and Maceday-Lotus lakes are all natural, glacial lakes located in rolling hills in the Clinton River watershed, Oakland County, Michigan. They are situated in an urban setting.

Morphometrically the lakes are quite similar, with limited areas of shallow littoral zone bordered by sharp contour breaks. All three lake units attain maximum depths of over 100 feet, maintain dissolved oxygen levels sufficient to support fish at depths of at least 50 feet during the summer, and in general maintain good water quality.

Orchard Lake covers 788 acres and reaches a maximum depth of 110 feet. The only inlet is an unnamed creek. The outlet is a reversible pumped discharge to Cass Lake. The village of Orchard Lake borders the southeast side of the lake. Orchard Lake contains good populations of largemouth bass, smallmouth bass, northern pike, bluegill, yellow perch, pumpkinseed, and black crappie. The only species stocked during the last 5 years was brown trout.

Cass Lake is 1,280 acres in area. The lake consists of four major basins with a maximum depth of 121 feet. Much of the bottom substrate is sand and gravel. The village of Keego Harbor lies on the southern shore. Major fish populations in Cass Lake include bluegill, crappie, largemouth bass, smallmouth bass, cisco, northern pike, and yellow perch. In addition, walleye, brown trout, and splake have been stocked in the past 5 years.

Maceday-Lotus Lake share three contiguous basins. Maceday Lake is relatively deep and Lotus Lake is relatively shallow. Fish can freely move between the basins. The maximum depth is 117 feet and the total surface area is 419 acres. Maceday-Lotus Lake contains major populations of largemouth bass, yellow perch, bluegill, crappie, and cisco. Fish species stocked in the past 5 years include walleye, rainbow trout, and splake.

CENSUS METHODS

Biologists, technicians, and temporary workers conducted the census based on a semi-random stratified sampling schedule developed with the aid of Research and Assessment Section personnel. The census consisted of interviewing anglers to determine how long they fished and