

Abstract

Experimental trap nets were tested in southern Lake Michigan at Saugatuck during May 22-September 20, 1978, and at Benton Harbor during May 1-September 26, 1979. Four pot sizes, ranging in volume from 3 to 31 m³, were fished at depths of 5 to 27 m at 5-m intervals. Lifts were made at 1- to 9-day intervals. At the Benton Harbor site 1,725 yellow perch were tagged and released.

The small trap nets were held securely in place despite powerful wave action and high velocity currents. Although small by commercial fishing standards, the experimental yields of 5,500 kg in 1978 and 2,200 kg in 1979 were sufficiently large to indicate that small trap nets can effectively capture yellow perch. The seasonal average catch rate of yellow perch increased as the volume of the trap net increased from 61 fish per lift in the 3 m³ net to 159 per lift in the 31 m³ trap. The largest catches per unit effort occurred at 5- to 7-day lift intervals for most nets.

The temperature and depth distribution of yellow perch varied according to sex and month. During June and July males were mostly in deeper (18-27 m) and colder (6-10 C) water than females (5-14 m and 16-24 C). They had similar distributions during May, August, and September.

Annual survival estimates were 28 and 33% for males and 56 and 60% for females at Benton Harbor and Saugatuck, respectively.

Differences in length-weight and age-length curves of yellow perch between the two study areas suggested discrete stocks. The Saugatuck population tended to be heavier at a given length and larger at a given age.

Of the 1,725 yellow perch tagged, only 49 (3%) were reported captured during 1979-81. Most (86%) were caught within a radius of 14 miles of the release site. Nearly equal numbers were recaptured north and south of the release point in 1979, indicating no favored migratory direction.