

ABSTRACT

Data on the largemouth bass and associated sport fish populations and fisheries were collected from six small Upper Peninsula lakes that were judged to have fair-to-good largemouth bass fisheries. Population estimates of the largemouth bass (≥ 226 mm long) were made with electrofishing gear prior to the opening of the fishing season. The sport fishery on each lake was censused from the opening of the bass season through Labor Day. Population estimates of all major fish species were made with fyke nets in September.

The number of legal-size (≥ 12 inches or 305 mm) largemouth bass in the six lakes prior to the opening of the fishing season ranged from 0.6 to 2.7 (mean = 1.6) per ha and the standing crop ranged from 0.47 to 1.99 (mean = 0.97) kg per ha. The bass in this study were 3 to 6 cm shorter than the state average for ages IV through X. Reproduction was not successful every year as some age groups were missing or poorly represented in all study lakes. The estimated catch of largemouth bass per ha ranged from 0 to 3.8 and averaged 1.5. The lake for which the estimated catch was 0 had the highest number and biomass of legal-sized largemouth bass per ha. The correlation between the number of largemouth bass caught and the number of legal-size bass present was not significant but the correlation between number of bass caught and number of pan fish caught was significant. This suggests that many largemouth bass were caught incidentally by anglers that were fishing for pan fish rather than by anglers that sought the bass. Sublegal largemouth bass accounted for 22% of those seen during the creel censuses.

Annual fishing mortality rates (u) were: 0.3972 for legal-size bass; 0.0950 for bass 254 to 304 mm long, and 0.0177 for bass 226 to 253 mm long. Predicted yield in numbers and in weight from 1,000 226-mm bass with three different size limits were calculated. With a 10-inch (254-mm) size limit, 732 bass would be harvested, but more than 50% of the fish would be harvested at age III and age IV when they would average 273 mm and 0.26 kg. With a 14-inch (356-mm) size limit, 586 bass with an average weight of 0.73 kg would be harvested, however, anglers most likely would keep a higher proportion of sublegal fish in the 305- to 355-mm range so much of the effect of a larger size limit would be lost. Thus, the present 305-mm size limit seems best unless there is a great increase in angler acceptance to quality fishing regulations and/or law enforcement.