

ABSTRACT

Selectivity of various combinations of mesh sizes in experimental gill-net gangs, which could be used to index the bloater chub population in Lake Michigan, was evaluated by several approaches: frequencies of the logarithm of fish length:mesh perimeter ratios, weight-length regressions, von Bertalanffy's growth coefficient K , and survival rates.

Five combinations of mesh sizes, which spanned a range of 50.9 to 76.2 mm, were evaluated on intervals of 1.6, 3.2, 6.4, and 12.7 mm in April and August 1984-85. Additionally, two groups of variable combinations containing mesh sizes of 50.9, 54.0, 58.7, 63.5 mm (April) and 50.9, 54.0, 57.2, 60.3, and 65.1 mm (August) were also examined.

No one combination of mesh sizes performed consistently well over all categories tested, as the results varied by the month in which the data were obtained. A system of ranking devised to summarize results indicated that the variable mesh combination produced the best overall rating in April, while a mesh interval of 3.2 mm provided a superior overall rating in August. It was recommended that an experimental gill-net gang to index the exploitable segment of the bloater chub population consist of mesh sizes 50.9 mm to 73.0 mm, and on an interval of 3.2 mm. Mesh intervals of 6.4 mm or larger for indexing bloaters should not be used.