

Fish as Indicators of Lake Habitat Quality and a Proposed Application

James C. Schneider

*Michigan Department of Natural Resources
Institute for Fisheries Research
212 Museums Annex Building
Ann Arbor, Michigan 48109-1084*

Abstract—The potential application of the Index of Biological Integrity (IBI) approach to classifying Michigan lakes was considered. This report reviews practical problems with IBI metrics as indicators of fish community health and discusses the types of perturbations occurring in lakes. Species actually present in a particular lake result from regional, local accessibility, chemical, macrohabitat, and microhabitat filters. Also reviewed are distribution and relative abundance patterns of species common to Michigan lakes and life history attributes useful for predicting their sensitivity. Many species should have value as indicators based on their general life history characteristics. A tentative scheme for scoring 11 fish metric indices is presented that minimally requires a good list of all fish species present in a lake plus additional information. Fish scoring results should be considered with other indices of lake condition. Additional fieldwork is needed to validate the utility of certain fishes as habitat indicators.