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PRESENT STATUS OF LAKE IMPROVEMENT WORK IN THE GLACIAL LAKES OF MICHIGAN

The experience of the Institute for Fisheries Research has indicated that many phases of lake improvement work are much more complicated and difficult than stream improvement. The evaluation of lake improvement work is to an even greater degree, more difficult than the evaluation of stream improvement. Due to the greater depth and expanse of water in glacial lakes it is most difficult, at times impossible, to carry out accurate, controlled observations in these waters. As a consequence, lake improvement has not progressed as rapidly, nor has it been checked as thoroughly, as stream improvement.

Much lake improvement work, however, has been done in Michigan and some other states. Scientific checking has shown that at least part of this work has accomplished its purpose. For example, gravel spawning beds installed for the use of bass and sunfish and spawning slabs for certain species of forage fishes have been very extensively utilized. Compact brush shelters have been found to attract and shelter large numbers of fingerlings, while large and loosely constructed shelters have attracted the larger game fish.

Interesting results are being obtained from experimental plantings of aquatic vegetation and from attempts to increase the size of existing weed beds, by the use of fertilizer and of devices installed to protect the plants from ice push and wave action. Studies have been undertaken to indicate the relative importance of the various species or groups of aquatic plants in the sheltering of fish and in the

harboring of food organisms for young game and pan fishes.

Many sand-bottomed, glacial lakes in Michigan are deficient in both fish and fish food organisms. Such lakes often contain relatively few, but often very large game fish, such as pike or bass, which are so evenly scattered around the open, shelter-less lake as to be virtually uncatchable. Large open brush shelters attract these large fish, making it possible for the fishermen to catch them, often within a few days after installation of the shelter. It is our belief that the annual catch of such fish from these open lakes is too small, and that by removal of the larger fish, a greater future yearly turnover may be expected. Observations have indicated an increase in the total fish-take on such open lakes after the installation of shelters, an increase which has been maintained for two years.

General lake surveys, giving a better understanding of existing conditions, have led to definite improvement and stocking recommendations for more than a hundred Michigan lakes.

As an example of fish management work in the glacial lakes of Michigan, reference may be made to experimental work now being conducted on a small group of pothole lakes in the Pigeon River State Forest, in Cheboygan County. These lakes were originally devoid of fish life. Several years ago, however, plantings of either brook trout or yellow perch were made in several of them. The plantings of brook trout were quite successful, the growth of the fish proceeding at a rapid rate and resulting in the capture by fishermen of heavy fish and large catches. The plantings of yellow perch resulted in a great increase of dwarfed, yellow perch, which the fishermen did not desire to catch. We are at present attempting to remove all or the greater proportion of these perch by poison and to establish brook trout in their stead.

A bulletin on the methods for the improvement of both natural and artificial lakes is in the advanced stage of preparation by the Institute for Fisheries Research.