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THE REMOVAL OF "WIGGLERS" FROM PINE LAKE,  
BARRY COUNTY, FOR WINTER FISHING BAIT

by

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The taking of wigglers (mayfly nymphs) as winter bluegill bait from certain lakes and streams in the southern end of the state has rapidly grown into a commercial enterprise. Handling and marketing of these baits occupies the full time of many persons during the winter season. Wigglers are transported to northern regions of the state by the truck load and sold to bait dealers or fishermen. With increasing winter fishing, the demand for this choice bait has grown until several large units and many small ones operate in both streams and lakes of southern Michigan to supply it.

The number of lakes in which these wigglers abound in quantities sufficient to warrant collection through the ice of winter is limited. Only a few of them are known to the commercial bait dealers. This condition causes heavy concentrations of bait gatherers on such lakes. Anxiety and concern over the supply of wigglers has been expressed by sportsmen's organizations and cottage owners on these lakes.

A similar problem arose in 1934 regarding the removal of caddis fly larvae and other invertebrate fish foods for bluegill bait from trout and non-trout streams. An investigation by Justin W. Leonard revealed

that ruthless methods of bait removal were endangering the fish food supply and also the very existence of Michigan trout streams. His findings were given in Report No. 275 of the Institute for Fisheries Research. This investigation and efforts of conservation clubs and the Conservation Department resulted in an act, passed by the 1935 Michigan Legislature, which prohibits removal of caddis fly larvae and other fish foods from any trout stream in the state except for personal use in fishing the stream where taken.

A visit to Pine Lake in Barry County (T 1 N, R 10 W, Sec. 5, 6, 7, 8) was made May 16, 1940 by Dr. C. J. D. Brown and the author at the request of D. E. Gerry and E. A. Tubbs of the Otsego Sportsman's Club and transmitted to us through the M.U.C.C. Examination of the shoal areas of the lake revealed an abundance of mayfly nymphs. In areas where the taking of bait was most concentrated, the population was roughly 5-10 wigglers per square foot. Pine Lake is particularly suited to this species of mayfly. Most of the shoals are composed of a flocculent marl, into which the nymphs can burrow easily. The openings of the burrows can be seen and counted. Following this examination, it was decided that removal of these insects from this lake was not endangering the total population. Conversation with Mr. Tubbs revealed that great numbers of these nymphs are removed from the lake each winter. Trucks of several tons capacity loaded there repeatedly during the last winter. This does not mean that tons of wigglers were hauled away with each load. Large quantities of water are required to maintain these organisms while in transit. It is known that the reproductive potential of this mayfly is great and one female could populate a large area with eggs which develop to adults according to the density of the population and the available food supply.

Removal of some of the population for bait gives organisms left a chance to develop whereas they might have died in the competition. It is felt that the taking of wigglers, at least from Pine Lake, is not detrimental to the maintenance of the population. The greatest objection to this practice is the nuisance and unsightly messes left on the ice. Cottage owners and fishermen object to large piles of muck, plants and ice blocks around the lake. Furthermore, there is the very legitimate complaint that plant beds, other fish foods and even spawning facilities might be disrupted or destroyed by such removal.

The mayfly nymphs are usually taken by a right-angle dip net through a previously cut hole in the ice. The net consists of a  $1/4$  to  $1/2$  inch steel rod bent into a circle with the two free ends of the rod bent at right angles to the circumference of the circle and so that the ends are vertical when the hoop rests on the substratum. These free ends are bound into a pole usually 6-8 feet long. In side view, the net looks like a large L. The circular frame is covered with a piece of  $1/4$  -  $1/8$  inch mesh grit screen. The screen is fitted to the hoop so that only a small sag is evident. In operation, the hoop of the net is set on the bottom, tilted slightly, moved into the bottom by a sliding motion and then raised. By jiggling the net up and down in the water, the bottom material is washed through the screen while the wigglers remain. The net shown by Mr. Tubbs was 18 inches in diameter and is said to be about standard size.

Some regulation of the taking of wigglers and other natural bait from lakes and non-trout streams should be sought. This is especially true in the smaller, non-trout streams where the likelihood of excessive removal is greatest. The taking of wigglers from Pine Lake is not likely to reduce

the population of this species to a point where it faces extinction but excessive operations might upset ecological conditions to such an extent that fish life would be profoundly influenced. A more extensive investigation of this problem is considered necessary before any definite recommendations can be made for control or prohibition of live-bait removal from natural waters.

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