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REPORT NO. 647

SUPPLEMENTARY REPORT ON THE REMOVAL OF WIGGLERS (MAYFLY NYMPHS)
FROM PINE LAKE, PRAIRIEVILLE TOWNSHIP, BARRY COUNTY

by

C. J. D. Brown

In a previous report (No. 617) by Dr. J. W. Moffett certain information was given regarding the removal of wigglers from Pine Lake (T 1N, R 10W, Secs. 5, 6, 7, 8) during the winter of 1939-40. Since that time, bait removal has greatly increased and further investigation seemed advisable.

On February 20, 1941 a trip was made to Pine Lake at the request of Mr. Westerman responding to inquiries made by Mr. L. R. Huizenga of Plainwell. We had a visit with Mr. Huizenga and discussed the problem with him. He reported the following information to us.

1. Wiggler removal in Pine Lake is increasing each year. Bait dealers from Grand Rapids, Houghton Lake, Jackson, points in Indiana and many other places secure their supply of wigglers from this lake.

2. Pine Lake is the only important source of wigglers in Barry and Allegan Counties.

3. Those involved in the business include both local and outside people. Local operators do a comparatively small amount of the business.

4. The techniques involved are varied. The most common procedure, however, is to saw out a block of ice and dip up the bottom (to a depth of about 6 inches) with various kinds of wire nets devised for the purpose. Operations of this kind are limited to water depths under about 6 feet. In deeper water longer slots are sawed and bottom dredging has been carried out by the use of devices pulled by horses.

5. According to Mr. Huizenga a reduction in the aquatic vegetation has been very pronounced in Lake 2 where the major collections have been made.

6. The average size of the bluegills caught is much less than in years prior to these dredging operations.

7. The debris hauled on to the ice is a nuisance to cottage owners and trespassing and destruction of shore property in the vicinity are of common occurrence.

Observations were made on Pine Lake and although only two outfits were at work collecting wigglers, it was possible to see the extent of previous operations here. Extensive collecting has been done on two parts of this lake. These are known locally as lakes 2 and 4. The remaining areas are either too deep or too unproductive of mayfly nymphs to make collecting profitable. Lake 2 has been used most extensively. Here, practically all of the shoal (0-6 ft.) has been dredged this winter. In some places it is reported that the bottom down to 10 or 12 feet has been exploited. Bait collectors on the lake complained that nearly all the bottom had been turned over and collecting was now much more difficult.

It was estimated that the more productive bottom produced about 10-20 wigglers per square foot. No accurate samples were taken however.

Just what these operations mean to the fish production can not be told without a continuous long time investigation. However, a number of things were quite obvious.

1. Operations remove large quantities of mayfly nymphs from this lake. According to the Plainwell Chapter of the Allegan County Conservation League 30,000 - 50,000 are removed daily during the height of operations. One two man crew reported the taking of 250,000 during last winter. This is probably not serious from the point of view of future mayfly populations, but removal does reduce the fish food supply in the lake which certainly will be reflected to a greater or less extent in growth of the fish there.

2. The destruction of great numbers of other food organisms found in the weeds and bottom soils is almost inevitable, since, in the process of collecting, much of the bottom mud and plants are hauled out on the ice and left there to freeze. Many organisms were observed in these deposits.

3. In the dredging operations most of the plant beds are destroyed. The shoal bottom is plowed, so to speak, and the crop of plants for the ensuing year will certainly be greatly affected. The value of these plants as a source of food and shelter is well known.

4. The washing of dredge hauls in the water greatly increases the turbidity of the lake. It is reported that the water in the entire lake gets "milky" due to these operations. The fine marl particles remain in suspension for a long time. This undoubtedly has a destructive effect on plankton and may destroy it entirely during the height of the disturbance. Deposits of this fine marl settle down all around the lake and may go into

suspension each time there is any appreciable wave action. This itself would have a detrimental effect on plankton and plant growths.

In conclusion, I believe the bait collecting done on Pine Lake, causes some damage to the fish food organism population, plant growth and consequently the fish themselves. Just how extensive this damage is can only be determined by a thorough study of the situation over 2 or more seasons.

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Report approved by A. S. Hazzard
Report typed by GW



Holes where collections of wigglers have been taken. A new snow covers all of the older workings, but an examination showed that almost all of the shoal in this area had been dredged.



Bait collector bringing up a net full of the bottom material which includes marl and plants (Chara). This is washed by "puddling" to take out the fine material and the coarser marl balls, organisms and plants are dumped on the ice where the wigglers are picked out by hand.



Working a newly cut area. Note the mud and plants behind the man holding the net.