

University Museums  
March 27, 1930

Institute for Fisheries Research

Report No. 5

Death of fish in Clark Lake, Tuscola County

This investigation was prompted by a report sent on March 19 to the Department of Conservation, by L. A. Maynard of Kingston, to the effect that many dead fish were found the day previous about the shores of Clark Lake, Section 20 [and 29] of Koylton Township, Tuscola County. It was generally feared that all the fish in the lake were destroyed. The request was made for information as to the cause of the mortality, and for more fish to restock the lake.

An examination of the lake was made by Carl L. Hubbs assisted by Mr. Wu, graduate student in parasitology, on March 23, the first opportunity. Several interested parties were also interviewed. George Morris, caretaker of the North Branch Fur Farm, which abuts the lake and crosses its outlet, testified that on February 19, after a bit of thawing weather had broken the severity of the long winter, he found many dead fish in the outlet, about 100 yards from the lake and below the culvert in the G. T. railroad fill. They could not have come up-stream, because the outlet is forced through a steel grating where it is crossed by the boundary line of the fur farm. They were held up by the little stream hitting a grassy flat, and piled up here. Morris estimated that the quantity of

fish piled up was about 7 bushels. Many were yet living. Some were seen to move down to the pile and then dash wildly out of the water onto the mess, where they died. Buckets full of the fish were carried off by neighbors for chicken feed. A few live adult perch were carried down to the little lake on the Fur farm, and some yearlings were put in a tub filled by a spring, and these all recovered.

The fish seen dead were mostly perch "minnows", with some large perch, large-mouth bass, common suckers and common shiners (few), and some pumpkinseed sunfish and a few green sunfish. All of these were found in the remnant of the pile on March 23. Some of the perch were newly dead and one yearling still alive, stranded among the grass hummocks.

Many dead fish were seen by Mr. Morris and others about the lake on March 16, soon after the spring break-up. Large numbers of gulls came and cleaned most of the dead fish in the lake, but we found some large bass (large-mouth), sunfish and perch, and also many frogs, dead near shore.

A sample of the dead fish and also of the live yearling perch which had been saved from dying by Mr. Morris, was thoroughly examined by Mr. Wu for parasitic infestation. Some parasites were found, but not enough to account for the mortality.

All the evidence points toward suffocation as the cause of the death of fish in Clark Lake in the winter of 1929-1930. The previous winter-killings which are reported may be attributed to the same cause. It is said by Carl Maxom and other local residents that winter-killing in Clark Lake has occurred only after the railroad company lowered the culvert (in the fill across the outlet) about three feet, approximately 15 years ago.

The suffocation of the fish in Clark Lake is due to its peculiar characteristics. It is over the eastern half very shallow, said to be not more than about 10 feet deep here. Toward the southwestern edge it deepens, according to some, to as much as 20 feet; but it must be regarded as a shallow lake, therefore without a large

oxygen reserve. The rather thick weed-beds on the shoals and the swampy south shore are conducive to oxygen consumption. Of perhaps even greater importance is the fact that it is fed solely by ground water, which is doubtless low in oxygen. The lake therefore freezes <sup>over</sup> solid to the shores on all sides. The long, hard winter this year was a contributing factor to the ~~last~~ mortality.

Fishes apparently do fairly well in Clark Lake except for the winter killing. Large-mouth bass are common and in good condition; they are said to result from planting about 1923. Perch are very abundant and some are of fair size; they are said to result from a planting in the spring of 1927 (from Bay City). Sunfish are fairly common; mostly pumpkinseeds but some green sunfish; "bluegills" or "roach" are reported but none were seen, and perhaps the identification is incorrect. Wall-eyes are said to have been common, as a result of introduction, until they were winter-killed about 15 years ago. Grass pike are said to have been common, as a result of carrying in young and half-grown. Mr. Maxon reports that he put 56 in last year, after seining these in a ditch tributary to Flint River, 2 miles south and 1 mile east of Clifford. Bullheads are said to be abundant and not killed by smothering. Common suckers are common and rather large. Some common shiners were seen dead, but in general forage minnows appear scarce.

We point out two means for improving conditions in this little lake. Firstly, it presumably needs some additional stocking now. We suggest a good planting with perch this spring, because they do well in the lake and were heavily killed. We also recommend the introduction of some large-mouth bass (not small-mouth) fingerlings, and also a small plant of wall-eyes, because these are said to have done well about 15 years ago as the result of plantings. Some golden shiners could be put in to advantage if available, to serve as forage fish. The introduction of grass pike is not desirable, for if the lake level is raised, the marshes will be covered.

The second means of improving the lake would be to raise the water to its

former level, about 3 or 4 feet higher than at present. This could easily be done by raising the culvert in the railroad fill. This would give a greater oxygen storage. It would also flood the surrounding marsh so as to bring the water up against the base of the hill on the north shore, making very attractive cottage sites (none now about the lake).

A simple devise would make it possible to control the water level in the winter so as to prevent smothering, and to hold the level in the summer 3 feet higher, without actually elevating the whole culvert. This would be to put in a box 2 feet wide and 5 feet high over the inlet to the culvert, so that by using a 4 foot gate one could hold the water about 3 feet higher than at present in the summer. Then several times during the winter the gate could be raised to let out more water and make an air chamber under the ice. It is our opinion that raising the water level 3 feet during the summer and occasionally shifting the level in the winter would greatly improve the lake from the standpoint of fishing and also of potential property values. We understand the local people are in favor of raising the level.

The following interested local residents asked for a report on our findings. We ask therefore that copies of this report, or suitable parts thereof, be sent to them.

Mr. L. A. Maynard, The Kingston State Bank, Kingston, Michigan.

Mr. George Morris, North Branch Fur Farm, R. F. D. 3, Kingston, Michigan.

Mr. Carl Maxom, R. F. D., Kingston, Michigan.

Mr. Harvey Ternksbury, Kingston, Michigan.

Respectfully submitted,

*Carl L. Hubbs*

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Director