

copy to: J. A. Kroll
C. W. Markley
Claude Lydell

INSTITUTE FOR FISHERIES RESEARCH
UNIVERSITY MUSEUMS
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A GILL BACTERIAL DISEASE AMONG THE GAME FISHES OF THREE LAKES IN MUSKEGON
AND KENT COUNTIES

On June 20, 1935 a party consisting of Claud Lydell, conservation officers Leo Price and C. W. Markley, and the writer visited Wolf Lake (Section 16, Egelston Twp., Muskegon County, Michigan) and Burns Lake (Section 25, Blue Lake Twp., Muskegon County, T. 12 N., R. 16 W.). Recent reports and observations had indicated that a heavy mortality of fish life was occurring in these two lakes.

Approximately one-fourth of the shoreline of Wolf Lake was traversed and the following dead fishes were found washed up on the shore:

- 65 Bluegillsjuvenile to adults
- 3 Large-mouthed Black Bassyoung to adults
- Several Yellow Perch, Pumpkinseed Sunfish, Bullheads
and Suckers.

The three bass and approximately fifty of the Bluegills were examined and all revealed a severe bacterial disease (presumably Bacillus columnaris Davis) located on the gills of all of these fish, and on the bodies (most often the tail fin) of many of them. In most of these fish, about one-half of the total gill filament mass had been destroyed by the bacteria. During the two days previous to this examination, local residents picked up several pails of dead fish from the shores of this lake; the greatest mortality was reported to have occurred during the previous two weeks.

In Burns Lake only Bluegills were affected. The greatest mortality had occurred within the previous two weeks, and several hundred dead Bluegills had been picked up by local residents. The cause of the mortality was apparently the same as in Wolf Lake, a gill infection by Bacillus columnaris.

On June 22, Silver Lake (Sections 9 and 10, Cannon Twp., Kent County, T. 8 N., R. 10 W.) was examined by Claud Lydell, Conservation Officer J. A. Kroll, and the writer. This lake also had an epidemic of this gill bacterial infection among the fish life. Both Bluegills and Large-mouthed Black Bass were affected. The mortality in this lake was not, however, as great as in the two preceding lakes.

Several instances of this gill disease, especially among bluegills, have been reported to the Institute from various parts of the state. The disease, therefore, appears to be quite general, and not confined to any particular area.

At the time these examinations were made, the question arose as to whether or not the fishes in these lakes, which were not killed by this bacterial disease, would be suitable for human consumption. For the benefit of the fishermen and local residents, it might well be stated here that there is no known reason for believing that the remaining fish populations of these lakes are rendered unsuitable for human use by the presence of this early spring bacterial epidemic.

According to Dr. H. S. Davis, this disease can be combated successfully if the affected fishes can be collected and subjected to a 1 to 30,000 solution of copper sulphate for 20 minutes; this method is practical only where the fish are in small bodies of water from which they can be easily seined. This method of treatment would not be practical, and hardly possible, where the disease occurs in lakes.

A detailed description of the disease and methods for its treatment are given in the following publication: Davis, H. S. (1922) A new bacterial disease of freshwater fishes. Bull. U. S. Bur. Fish., Vol. 38, Doc. No. 924, pp. 261-280.

INSTITUTE FOR FISHERIES RESEARCH

Gerald P. Cooper

cc: J. A. Kroll
C. W. Markley
Claud Lydell
Fred A. Westerman

Gerald P. Cooper
Forage Fish Investigator