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INSTITUTE FOR FISHERIES RESEARCH
DIVISION OF FISHERIES
MICHIGAN DEPARTMENT OF CONSERVATION
COOPERATING WITH THE
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March 13, 1941

REPORT NO. 655

WINTER-KILL IN SOUTH LONDO LAKE, IOSCO COUNTY, 1941

by

John Greenbank

On March 4, 1941, the Institute received a report, through the Lansing office of the Fish Division, that a number of dead and dying fish had been observed in South Londo Lake, near Hale, Iosco County. Presuming winter-kill probably to be the cause of death of these fish, Raymond Johnson and I visited the lake, on March 5, and obtained the information given below.

South Londo Lake, called on some maps Londo Lake or East Londo Lake, lies in Sections 29, 30 and 31, T. 23 N., R. 5 E., Iosco County. It is approximately 200 acres in area, generally shallow, but supposed to have a depth in places of about twenty feet. Most of its bottom is soft. The water is moderately hard, and fairly rich organically; rooted vegetation is abundant, but not excessively so.

The lake has a good local reputation for fishing; quite a few large pike and many nice catches of bass (smallmouth) and pan-fish have come out of it. During the period 1934-1939, according to the stocking records, some 1,200,000 walleyes (fry) were planted in the lake, as well as about 50,000 perch,

50,000 bluegills and 2,000 smallmouth bass. Several catches of walleyes have been made, but it is not known whether the species has successfully spawned in the lake.

During late February and the first few days of March, 1941, local fishermen, fishing in ice shanties, observed quite a few large pike and other fish, either dead or in evident distress. A fishing party observed that bait minnows, lowered into the water in a minnow bucket, soon were rendered helpless, but revived when they were transferred to well water. Because of the snow cover, we were unable to find any dead fish, with the exception of several small fish, probably minnows, which were lying on the lake bottom at an old shanty hole.

The ice on the lake, on March 5, was about 24 inches thick, fairly clear. It was covered, rather uniformly, with about ten inches of snow. According to local residents on the lake, for the previous five or six weeks the lake had a continuous snow cover, varying from a few inches to a foot in thickness.

Samples of the water were taken, about noon on March 5, at two stations. One of these was in about seven feet of water in the south end of the lake, toward the east shore. The other was in ten feet of water, in the center of the north bay. The bottom was soft at both stations. These water samples showed the following chemical characteristics:

Station	Depth	pH	Free CO_2, p.p.m.	M.O. alkalinity, p.p.m.	Dissolved O_2, p.p.m.
S. end	4"	6.8	15	153	0.4
	2'	6.8	..	...	0.3
	6'	6.8	16	143	Trace
N. end	4"	6.8	18	149	0.4
	3'	6.8	..	...	0.1
	6'	6.8	..	...	Trace
	9'	6.8	..	...	Trace

The water from all depths had a distinct, but not excessively strong, putrid odor.

It may be seen that rather harsh conditions had been reached in the water; and it is quite obvious that a true winter-kill had occurred. There seems to be little doubt that there is a definite connection between the water conditions and the shutting off of sunlight by the snow cover over such an extended period.

It is very desirable that observations be made on this lake at the time of the break-up of the ice, in regard to the numbers of fish which were killed. Also, information should be obtained, if possible, during the next summer or two, as to how many fish, if any, survived the catastrophe.

The interest shown in the investigation by Mr. Howard Bowman, of South Londo Lake, and the information and assistance which he furnished, are gratefully acknowledged.

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