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CREEL CENSUS AND GROWTH RATE OF BROWN TROUT IN

LITTLE LONG LAKE, CLARE COUNTY

by

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Little Long Lake, which is one of three designated trout lakes in Clare County, is located in T19N, R14W, Sections 21 and 22. The lake, of 43 acres and three depressions of 40, 50, and 60 feet contours, is almost surrounded with hills covered with hardwoods. Its outlet flows into Sutherland Lake. Little Long Lake is one of the very few brown trout lakes in Michigan. The original planting of 1,000 adult brown trout was made in 1937. The following table shows the brown trout stocking records for Little Long Lake:

Date	Number planted	Average length	Age Reported ¹	Fin clipped
11-15-46	2,000	7.3	Adults	Dorsal fin
11-15-46	12,981	1.3	8 mos.	Dorsal fin
9-17-45	2,500	6.0	Adults	None
7-9-45	998	10.3	Adults	None
1944	425	10.0	Adults	None
1942	1,500	...	7 mos.	None
1942	278	...	Adults	None
1941	500	...	Yearlings	None
1940	500	...	Adults	None
1939	500	...	Adults	None
1937	1,000	...	Adults	None

¹ Adults and yearlings are of various ages -- from 18 months to 32 months or more. (According to J. T. Wilkinson, Regional Fisheries Supervisor).

By the fall of 1946 a total of 8,701 adult and 14,481 fingerling brown trout had been stocked in this lake. November 15, 1946, the first marked brown trout were introduced; 12,981 dorsal fin-clipped fingerling averaging 1.3 inches in length and 2,000 dorsal fin-clipped adults averaging 7.3 inches in length were stocked. It was unfortunate that the same mark was used for both lots of fish.

This report is possible through the fine cooperation of the Big Six Club composed of Saginaw residents who have a cabin on the lake.

The executive secretary of the club, Mr. Fred Lilja, Jr., mailed the scale samples and creel census records to the Institute for Fisheries Research periodically during the fishing season. This report describes the fishing results mainly of the Big Six Club and their friends on Little Long Lake.

In this report one fisherman day will be referred to as one fisherman or one angler. A total of 122 fishermen was recorded using Little Long Lake during the 1947 trout season; only 9 anglers or 7 percent reported catching no legal fish. The number of unsuccessful anglers is extremely low; therefore it appears as if some of the unsuccessful anglers did not write down their fishing or the anglers recorded were more skillful or were better acquainted with the fishing grounds than the average Michigan angler. Also the longer average fishing day per angler may be a factor. For the three anglers who failed to record their fishing time the average time spent per angler for August was used.

The season's catch consisted of two largemouth black bass and 666 brown trout of which 519 were fin-clipped and the remaining 147 were unmarked or a total of 668 fish. Of the 519 fin-clipped brown trout caught, 397 were released although nearly all were greater than the legal length of seven inches.

The data were divided into monthly periods to determine the number of fish caught per hour which is used as an index of the quality of fishing. The number of fish caught per hour varied from a "low" of 0.16 fish (September, 1 day) to a "high" of 1.65 fish (June 1 to 30) and the average for the season was 1.04 fish per hour. The average number of fish caught per angler was 5.5. These are high figures for a trout lake.

Table 1.--Summary of creel census data for 1947 trout season, Little Long Lake,
Clare County.

Month	Number anglers	Number un-successful anglers	Hours fished	Total fish caught	Catch per hour	Number browns kept (Number marked)	Average length	Number fin-clip browns released	Average length	Number largemouth bass kept	Average length	Average time spent fishing per angler	Average number fish caught per angler	Average number browns kept per angler	Average number browns released per angler
April	10	1	44.0	23	0.52	15	13.4	8	8.5	...	...	4.4 hr.	2.3	1.5	0.8
May	36	6	208.0	140	0.67	63	13.9	77	8.5	...	...	5.8 hr.	3.9	1.8	2.1
June	19	...	100.2	165	1.65	14(4)	12.5	150	8.5	1	14.0	5.3 hr.	8.7	0.7	7.9
July	27	...	142.5	227	1.59	101(88)	10.9	126	10.1	...	...	5.3 hr.	8.4	3.7	4.7
August	27	1	127.1 [↓]	110	0.87	73(28)	11.6	36	10.6	1	15.0	4.7 hr.	4.1	2.7	1.3
September	3	1	19.0	3	0.16	3(2)	12.7	...	...	...	...	6.3 hr.	1.0	1.0	...
Total	122	9	640.8 [↓]	668	1.04	269(122)	12.2	397	9.5	2	14.5	5.3 hr.	5.5	2.2	3.3

↓ For the 3 anglers who failed to record their fishing time the average time spent per angler for August was used.

The growth of the brown trout was studied by means of scales from fish caught by hook and line. Twenty individuals were sampled from April 26, 1947 to August 31, 1947. Two of these samples were discarded because of the lack of good scales. A very large percentage of re-generated scales was noted for these fish. This agrees with observations of brown trout scales from other localities. The scales were cleaned, mounted in glycerin-gelatin and studied with the scale projection machine at a magnification of 90 diameters. Ages were determined independently at two different times approximately two months apart. Quite a bit of difficulty was encountered in the interpretation of annuli and the results obtained were not entirely consistent; therefore the average lengths for the various years of age are to be considered only approximations. Differences in growth due to sex could not be demonstrated from the few data present.

Growth of Brown Trout in Little Long Lake

Age	4th summer	5th summer	6th summer	7th summer
Number of individuals	3	10	3	2
Mean total lengths in inches	11.5	14.2	14.8	17.2

The various plantings of yearling and adult brown trout were made from Paris Fish Hatchery and include fish of different ages within the same plant. For this reason it is impossible to identify individuals in the catch with a particular planting. However, the scales exhibit a somewhat faster growth during the later years (after planting) proving that conditions in Little Long Lake are very favorable for rapid growth of brown trout.

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