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THE AGE OF BROOK, BROWN, RAINBOW (STEELHEAD), AND LAKE TROUT
OF VARIOUS SIZES TAKEN IN MICHIGAN WATERS.

by

David S. Shetter

For several years there has been a demand for information concerning the age of trout of various sizes. In response to this demand, all information available on trout in the scale files of the Institute for Fisheries Research was compiled.

Although there are several thousand scale samples of brook, brown, and rainbow trout on file which have been collected in Michigan waters, only a small portion of them have been mounted for reading. The chief bottle-neck is the time and skill needed to prepare the scales for the actual reading. Trout scales (particularly from fish less than 6 inches long) are small and difficult to handle and clean under the microscope, and even experienced technicians seldom mount over 50 slides per day.

The average size of the fish of the various ages is shown in Table I. Measurements are given in inches. The number of specimens aged from which the average size was computed is given also. In parentheses underneath each average is shown the size of the largest and the smallest fish of the particular age group.

As the reader will see, the most reliable information is available for brook trout, for which 1,316 specimens have been mounted and ages

determined. More brown trout and rainbow trout, and many more lake trout scales should be collected and aged to give a more accurate picture of their average growth in Michigan waters. At a later date, after more scales are available for inclusion in the averages, these figures will be revised. Until that time, these figures will give interested anglers a fair approximation of the age of their trout catches.

It may be of interest to fishermen to know that the ages presented in the table represent, for the brook and brown trout, the maximum known ages for these species in Michigan waters. Dr. Hazzard has one scale in his personal collection of a large brook trout taken in a Quebec lake which was a 7-summer-old fish, so it is not impossible that this species lives just as long in Michigan streams or lakes. Rainbow trout are known to reach an age of 7 years, and lake trout have been reported by Van Oosten (1932) to reach an age of 20 years.

The reader will note also from Table I that the average size of brook, brown, and rainbow trout in the third summer of life (age group II), is greater than legal length. In streams or lakes where growth is rapid, trout may exceed 7 inches in length some time during the second summer of life. Where growth is slower, some individuals may not reach legal length until the fourth summer of life. Very few brook, brown, or rainbow trout are smaller than legal length by the middle of their fifth summer of life.

Probably the most phenomenal increase in growth between any two years is shown in the average size of 3- and 4-summer-old rainbow trout (see Table). This growth is the result of a change in habitat of the rainbow trout, since many rainbows migrate from stream to lake sometime during the third summer of life. Their diet while in the lakes probably

consists almost entirely of fish instead of insects (which formed the bulk of their food during their early stream life). On returning to the stream to spawn in the spring of their third or fourth year of life, individual fish often will be 8 to 10 inches larger than when they left the stream. An interesting and detailed study of the growth of rainbow trout in certain Michigan waters has been published by Greeley (1933).

If any anglers catch large trout which they think might be older than any listed in Table I, we would be pleased to receive scale samples and measurements on such fish. Scales may be readily collected by scraping the side of the fish at a point midway between the lateral line and the dorsal fin, and wiping the scales into a small folded paper. The mucus normally adhering to a fish will help keep the scales stuck to the paper in which they are placed. The species of trout, locality, and date of capture, and the length (and weight, if possible) of the fish, should be recorded. The scales and the information should be mailed to: Institute for Fisheries Research, University Museums Annex, Ann Arbor, Michigan. Information on the age of the specimens submitted will be returned to the anglers as soon as possible.

Thanks are due to Dr. J. O. Van Oosten of the United States Fish and Wildlife Service for permission to include the sizes and ages of 31 lake trout from the collections of the Service.

Literature Cited

- Greeley, John R. 1933. The growth rate of rainbow trout from some Michigan waters. *Trans. Am. Fish. Soc.*, Vol. 33, pp. 361-378.
- Van Oosten, John. 1932. The maximum age of fresh-water fishes. *The Fisherman*, Vol. 1, No. 11, October, 1932, pp. 3, 4.

INSTITUTE FOR FISHERIES RESEARCH

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Table I
 The length of trout from Michigan waters
 at various ages. Measurements in inches.
 (Figures in parentheses indicate the largest
 and smallest fish in each age group).

Age group	Summers of life	Brook trout		Brown trout		Rainbow trout		Lake trout	
		Av. size	Number of fish aged	Av. size	Number of fish aged	Av. size	Number of fish aged	Av. size	Number of fish aged
0	1	3.3	75	3.7	59	3.5	100	3.6	2
		(2.1-5.5)		(2.9-4.9)		(2.5-4.9)		(3.4-3.7)	
I	2	5.5	550	6.8	33	6.1	122	5.3	1
		(2.9-9.8)		(5.3-8.3)		(3.5-7.4)		(5.3)	
II	3	7.4	480	8.1	19	7.5	32	8.1	2
		(3.8-16.2)		(6.6-9.9)		(5.8-11.8)		(7.4-8.8)	
III	4	9.5	182	10.6	16	17.8	63	10.4	1
		(5.7-15.1)		(7.8-14.0)		(6.4-22.0)		(10.4)	
IV	5	12.8	24	12.7	3	19.8	53	13.2	3
		(7.7-18.5)		(9.4-16.1)		(11.1-24.6)		(10.1-15.0)	
V	6	16.2	5	12.6	2	23.9	24	18.2	13
		(14.7-17.7)		(12.1-13.0)		(14.5-30.0)		(17.3-21.2)	
VI	7	...	...	...	...	22.8	2	19.3	3
						(22.1-23.4)		(18.8-19.5)	
VII	8	...	...	19.9	1	...	...	20.8	3
				(19.9)				(19.5-22.8)	
VIII	9	...	...	...	...	...	...	25.5	5
								(22.0-33.2)	
IX	10	...	...	...	...	...	...	25.8	5
								(24.0-29.3)	
X	11	...	...	...	...	...	...	28.8	2
								(28.5-29.0)	
XI	12	...	...	...	...	...	...	...	...
XII	13	...	...	...	...	...	...	33.0	1
								(33.0)	
Total specimens aged		1,316		133		396		41	