

AGE AND RATE OF GROWTH OF THE CHANNEL CATFISH IN REELFOOT LAKE FOR 1960 AND 1966¹

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INTRODUCTION

In 1937 an investigation was started to determine the age and rate of growth of game and rough fish in Reelfoot Lake. Since the original investigation of channel catfish, *Ictalurus lactustris punctatus* (Schoffman 1954), changes in fishing regulations have been made. In 1955 commercial fishing of game fish was abolished by the Tennessee Legislature. This act allowed the yellow bass or striped jack, *Morone interrupta* Gill, and the channel catfish (along with other rough fish) to be taken commercially. This has put heavy commercial fishing pressure on these two species. This study has been made to determine if the channel catfish is able to withstand this heavy fishing pressure. Previous studies were made by Schoffman (1954, 1961). Collections for all studies were obtained from commercial catches with trotlines. In all studies the method of Sneed (1951) was used. The method of collecting and sectioning the pectoral fin spines for all studies was that of Schoffman (1954). Age determinations were made for each specimen and arranged according to age groups, *i.e.*, a fish in age group two would show one annulus and be in its second year of life.

RATE OF GROWTH

The histogram (Fig. 1) shows the distribution of 510 channel catfish for 1960 and 500 for 1966 arranged according to size groups. In 1960 age group two represents 23 per cent; age group three, 50 per cent; age group four, 25 per cent; and age group five, 2 per cent. Age groups two and three represent 73 per cent of all specimens in this study. In 1966 age group one represents 3 per cent; age group two, 31 per cent; age group three, 21 per cent; age group four, 26 per cent; and age group five, 19 per cent. In 1960 age groups two and three represent 73 per cent of all the specimens and in 1966 age groups two and three represent 62 per cent of all specimens. In comparable data for 1960, age

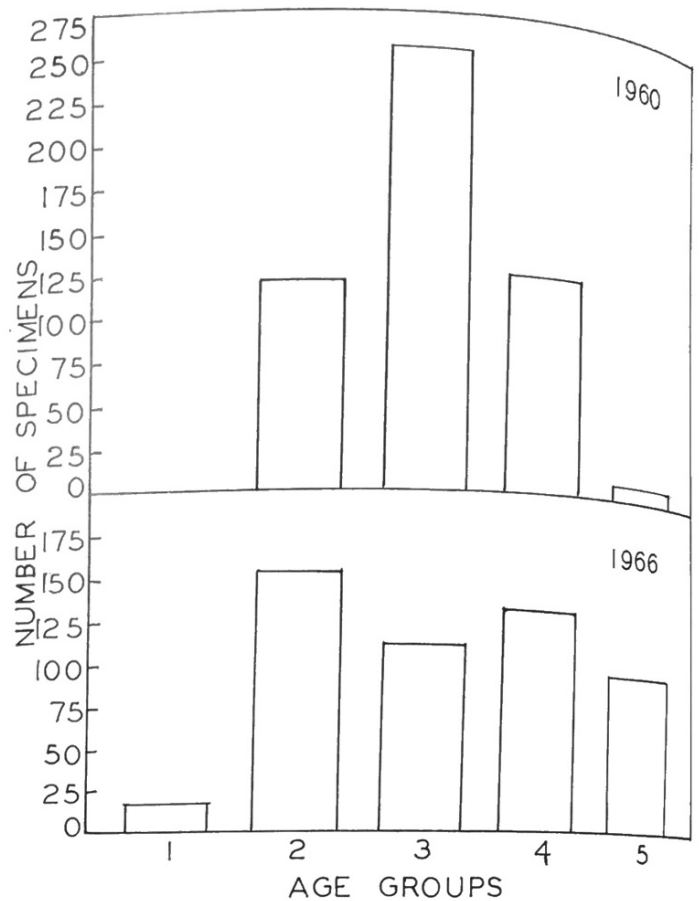


Fig. 1. Frequency distribution of 1010 Reelfoot Lake channel catfish; 510 for 1960 and 500 for 1966.

groups four and five totaled 27 per cent; for 1966, 45 per cent. In 1966 more large fish were taken.

The average rate of growth in length and weight of 510 channel catfish for each age group in 1960 and 500 channel catfish in 1966 is shown in Table I and Figure 2. If the length for age group five (19.39 inches) is taken as 100 per cent, it may be stated that 65 per cent of the total growth is completed by specimens of age group two, 74 per cent by age group three, and 87

TABLE I

AVERAGE TOTAL LENGTH AND WEIGHT FOR EACH AGE GROUP FOR 510 CHANNEL CATFISH FROM REELFOOT LAKE FOR 1960 AND 500 FOR 1966.

Age Group 1960	Number of Fish	Average Length (inches)	Average Weight (ounces)	Age Group 1966	Number of Fish	Average Length (inches)	Average Weight (ounces)
2	120	12.62	9.43	1	16	9.70	6.31
3	254	14.31	15.12	2	153	12.77	13.33
4	127	16.81	23.66	3	105	14.65	17.80
5	9	19.39	38.44	4	131	16.52	29.15
				5	95	18.97	40.88

¹ Contribution from the Reelfoot Lake Biological Station No. 98. The study here reported on was made possible by a grant from the Reelfoot Lake Biological Station of the Tennessee Academy of Science, to whom the author wishes to express his appreciation.

CONCLUSION

The study of age and growth of channel catfish in Reelfoot Lake, Tennessee, has extended over a period of fourteen years. The second study (Schoffman 1961) showed a decrease in length and weight. During the last five years of the second study, there has been no commercial fishing of game fish. Commercial fishing of game fish was abolished in 1955. Since this 1955 act commercial fishermen have increased their efforts to take more rough fish, especially channel catfish. This increased fishing pressure on channel catfish in Reelfoot Lake has not effected their productivity since both length and weight have increased since 1960 (Schoffman 1961). This study also shows more individuals in the older age groups have been taken.

ACKNOWLEDGMENTS

The author's gratitude is extended to Dr. C. L. Baker, Director of the Reelfoot Lake Biological Station, for many helpful suggestions. He also wishes to acknowledge his indebtedness to Marvin Hayes of Samburg, Tennessee, for aid in obtaining commercial catches.

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