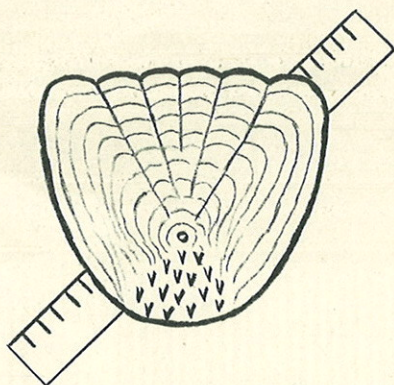


THE GROWTH RATES OF
SOME
KENTUCKY FISHES



BY

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In the past few years scale samples have been taken by technicians and field workers of the Kentucky Division of Game and Fish as a part of routine studies to determine management practices in this state. Some bodies of water have received more attention than others; either because of their importance to the sport fishery of Kentucky, or because of their shortcomings. In no instance has an academic age and growth study been undertaken, but it is believed that the data contained herein will help to provide some information on this subject in regard to Kentucky fishes.

Standard procedures were used in all determinations, and all scales were either originally read or re-read by Carter. The averages used are weighted arithmetic means.

1. Herrington Lake This reservoir, located in central Kentucky, was impounded in 1925 for the production of power. It has an average depth of 73 feet and a surface area of 2,940 acres. During the last 25 years it has shown, according to dock operators and local sportsmen, no tendency to lose its original productivity. At the present time it furnishes fishing comparable to many newer reservoirs. The principle forage fish present is the gizzard shad. In 1950 the studies conducted in Herrington Lake showed the game fish composing 23.5% of the total weight, pan fish 13.0%, and rough fish 63.5%.

CALCULATED TOTAL LENGTHS IN INCHES AT THE TIME OF ANNULUS FORMATION

HERRINGTON LAKE						
		AGE GROUP				
SPECIES	ITEM	I	II	III	IV	V
Largemouth bass	T.L.	6.4	12.4	15.2	17.6	19.0
	No.	31	12	4	1	1
Kentucky bass	T.L.	5.3	9.6			
	No.	12	4			
Bluegill	T.L.	2.3	5.8			
	No.	86	14			
White crappie	T.L.	3.6	8.2	10.8		
	No.	31	15	3		
Black crappie	T.L.	2.8	7.5	9.0		
	No.	29	9	1		
White bass	T.L.	7.2	12.3	14.2	15.3	
	No.	45	11	4	1	

2. Slate Creek This stream is located in east central Kentucky on the outer edge of the fertile bluegrass region. The drainage area being for the most part limestone soil is very productive, supporting an average of 181 pounds of fish per acre.

Being slow moving and deep, Slate Creek has large stretches of water which are somewhat more suited to the production of rough fish than the game and pan fishes. The bottom is for the most part silt, however there are some rocky areas where game fish production is very good. During 1950 a total of four stations were sampled at selected sites along the streams course. A population analysis was made at each station and the data combined to give an average species composition for the entire stream. Game fish, which include Kentucky and Smallmouth bass, averaged 12.93% of the total weight. Pan fish averaged 20.00% of the total weight and rough fish averaged 66.99%.

CALCULATED TOTAL LENGTHS IN INCHES AT THE TIME OF ANNULUS FORMATION

SLATE CREEK							
		AGE GROUP					
SPECIES	ITEM	I	II	III	IV	V	VI
Kentucky bass	T.L.	6.0	9.5	11.4	13.4	16.1	20.0
	No.	41	18	7	4	2	1
Smallmouth bass	T.L.	6.6	9.6	11.7	14.1		
	No.	7	4	2	1		
Rock bass	T.L.	2.9	5.3	7.0	8.0		
	No.	58	39	20	7		
Warmouth	T.L.	3.5	5.5	6.8			
	No.	16	14	8			
White crappie	T.L.	6.0	8.9	10.7			
	No.	22	3	1			

3. Elkhorn Creek This stream is located in the heart of the bluegrass region. The headwaters are near Lexington and the mouth ten miles due north of Frankfort. It has an over-all length of approximately 35 miles. This stream is a large clear fast stream with a bottom composed of rubble and gravel and is considered one of the very finest smallmouth bass streams in the state. It is a fly fishermans paradise as it can be waded throughout its entire length with the exception of some of the deeper pools. Smallmouth bass are the principle game fish and rock bass furnish the pan fisherman a great deal of sport. Channel cat, longear, and crappie are also found in some sections.

CALCULATED TOTAL LENGTHS IN INCHES AT THE TIME OF ANNULUS FORMATION

ELKHORN CREEK						
		AGE GROUP				
SPECIES	ITEM	I	II	III	IV	V
Smallmouth bass	T.L.	6.9	9.0	11.0	12.6	16.4
	No.	35	19	9	2	1
Rock bass	T.L.	3.7	5.9	6.6		
	No.	22	13	1		

4. Kentucky Lake This 260,000 acre lake was formed by the impoundment of the Tennessee River at a point seventeen miles above its mouth. The pool itself extends 184 miles through western Kentucky and Tennessee. Its average depth is 23 feet, and because of its relative shallowness it supports a high percentage of rough fish. A complete eradication of the fishes of four bays totaling twelve surface acres showed a standing crop of 249 pounds per acre. Of this total weight 80.6% was in rough fishes, 65.5% in gizzard shad alone, and 19.4% in game and pan fish.

CALCULATED TOTAL LENGTHS IN INCHES AT THE TIME OF ANNULUS FORMATION

KENTUCKY LAKE						
		AGE GROUP				
SPECIES	ITEM	I	II	III	IV	V
Largemouth bass	T.L.	5.5	10.5	13.5	14.7	
	No.	10	4	3	2	
Bluegill	T.L.	3.4	4.4	5.9	6.4	
	No.	24	20	14	1	
White bass	T.L.	5.6	8.3			
	No.	13	10			
Drum	T.L.	4.3	6.7	9.1		
	No.	10	9	1		

5. Beaver Creek This stream is in the extreme south-central part of the state. It is a small stream located entirely within Wayne County. The headwaters are approximately five miles south of Monticello and the mouth is four miles above Wolfe Creek Dam on the Cumberland River. A population analysis was made of this stream as a part of a pre-impoundment study of Wolfe Creek Reservoir. Game fish made up 12.3% of the total weight, pan fish 11.9%, and rough fish 75.8%.

CALCULATED TOTAL LENGTHS IN INCHES AT THE TIME OF ANNULUS FORMATION

BEAVER CREEK						
		AGE GROUP				
SPECIES	ITEM	I	II	III	IV	V
Largemouth bass	T.L.	4.5	9.8	13.3		
	No.	6	1	1		
Kentucky bass	T.L.	6.0	8.9			
	No.	11	3			
Bluegill	T.L.	1.7	3.1			
	No.	15	5			
Longear	T.L.	2.6	4.2	5.3	5.9	
	No.	57	31	12	1	
Drum	T.L.	4.9	8.9	11.3	11.8	
	No.	11	3	3	1	

6. Dale Hollow This lake, formed by the impoundment of the Obey River, spreads over 30,000 acres of the south-central portion of Kentucky and the north-central portion of Tennessee. Its average depth is 55 feet. Since 1943 it has provided excellent bass and bluegill fishing. Game fish represent 11.5% of the total weight of fishes present, pan fish 23.9%, and rough fish 64.6%. These figures are based on 1,300 pounds of fish recovered after the poisoning of eight coves totaling 10.6 acres.

CALCULATED TOTAL LENGTHS IN INCHES AT THE TIME OF ANNULUS FORMATION

DALE HOLLOW RESERVOIR						
		AGE GROUP				
SPECIES	ITEM	I	II	III	IV	V
Smallmouth bass	T.L.	5.1	11.0	15.3	20.4	
	No.	23	6	4	1	
Largemouth bass	T.L.	4.7	10.6	14.6		
	No.	8	8	3		
Kentucky bass	T.L.	5.3	9.0	11.8		
	No.	40	7	2		
Bluegill	T.L.	3.2	5.6	6.9	7.8	
	No.	51	49	27	6	
Black crappie	T.L.	3.2	7.8			
	No.	22	16			

CALCULATED TOTAL LENGTHS IN INCHES AT THE TIME OF ANNULUS FORMATION

COMBINED AVERAGES FOR LAKES							
		AGE GROUP					
SPECIES	ITEM	I	II	III	IV	V	VI
Largemouth bass	T.L.	5.9	11.5	14.5	15.6	19.0	
	No.	49	24	10	3	1	
Kentucky bass	T.L.	5.3	9.2	11.8			
	No.	52	11	2			
Smallmouth bass	T.L.	5.1	11.0	15.3	20.4		
	No.	23	6	4	1		
White bass	T.L.	6.8	10.4	14.2	15.3		
	No.	58	21	4	1		
White crappie	T.L.	3.6	8.2	10.8			
	No.	31	15	3			
Black crappie	T.L.	3.0	7.7	9.0			
	No.	51	25	1			
Bluegill	T.L.	2.7	5.3	6.6	7.6		
	No.	161	83	41	7		
Drum	T.L.	4.3	6.7	9.1			
	No.	10	9	1			

CALCULATED TOTAL LENGTHS IN INCHES AT THE TIME OF ANNULUS FORMATION

COMBINED AVERAGES FOR STREAMS							
		AGE GROUP					
SPECIES	ITEM	I	II	III	IV	V	VI
Largemouth bass	T.L.	4.5	9.8	13.3			
	No.	6	1	1			
Kentucky bass	T.L.	6.0	9.4	11.4	13.4	16.1	20.0
	No.	52	21	7	4	2	1
Smallmouth bass	T.L.	6.9	9.2	11.1	13.1	16.4	
	No.	42	16	11	3	1	
Rock bass	T.L.	3.3	5.5	7.0	8.0		
	No.	50	52	21	7		
Warmouth	T.L.	3.5	5.5	6.8			
	No.	16	14	8			
White crappie	T.L.	6.0	8.9	10.7			
	No.	22	3	1			
Longear	T.L.	2.6	4.2	5.3	5.9		
	No.	57	31	12	1		
Bluegill	T.L.	1.7	3.1				
	No.	15	5				
Drum	T.L.	4.9	8.9	11.3	11.8		
	No.	11	3	3	1		

