

## Length-Weight Relationship of Cut-throat at Lakelse Lake

Length-weight relationship - Data for the determination of the length-weight relationship were obtained from 61 cut-throat sampled in the anglers' catches from the lake and the river in 1951. The following equation, relating length and weight was obtained from the data

$$\log W = -1.76 + 2.53 \log L$$

where W = weight in ounces      L = length in inches.

Comparison of actual and calculated weights (Table I and figure 1) shows that the equation fits the empirical data reasonably well between 8 and 12 inches. The greatest differences between actual weights and calculated weights are encountered in the larger fish and are probably caused by the small number of these fish sampled. The value of the exponent shows that the weight of the cut-throat increases to a power much less than the cube of the length and thus indicates that the body shape changes rapidly as the fish grow in length. Calhoun (1944) obtained a length-weight equation of  $\log W = -3.638 + 3.086 \log L$  for a population of cut-throat. In this case the exponent was very near 3.0, indicating that the shape did not change to a large extent as the fish grew in length. Appelget (1950), found that the weight of channel catfish increased to a power much greater than the cube of the length. This they felt indicated a rapid change in the body shape as the fish grew in length.

### References

- Appelget, J. 1950. Determination of age and rate of growth from vertebrae of the channel catfish, Ictalurus lacustris punctatus. Trans. Amer. Fish. Soc. 80:119-139.
- Calhoun, A.J. 1944. Black-spotted trout in Blue Lake California. Calif. Fish and Game, Pub. 30(1):22-42.

Table I. Empirical and calculated weights of cut-throat of various lengths, based on 61 samples obtained from the anglers' catches from the lake and the river in 1951.

Empirical lengths (inches)	Mean empirical weights (ounces)	Calculated weights (ounces)
8	3.16	3.3
8.5	3.42	3.9
9.0	4.15	4.5
9.5	5.15	5.15
10.0	5.89	5.9
10.5	6.81	6.65
11.0	8.12	7.40
11.5	8.63	8.30
12.0	9.78	9.35
12.5	11.00	9.80
13.0	12.79	12.60
13.5	14.30	12.85
14.0	16.00	13.00

