

An evaluation of total body electrical conductivity to estimate body composition of largemouth bass,



Measurement of total body electrical conductivity (TOBEC) recently has been used to estimate the body composition of several fish species in a noninvasive manner. The present study was conducted to evaluate the use of TOBEC in estimating body composition of largemouth bass (*Micropterus salmoides*). A total of 85 largemouth bass weighing 154 to 3245 g were measured for electrical conductivity after which their proximate composition was determined by chemical means. Significant linear relationships existed between the natural logarithm of whole-body ash, lean body mass, lipid, protein, and water content and the natural logarithm of length and/or weight with r^2 values ranging from 0.860 to 0.999. Inclusion of the TOBEC value did not significantly improve the prediction accuracy of these models. Equations were developed to allow the prediction of body composition of largemouth bass based on length and weight measurements. Prediction models including only length and weight as variables provided estimates of body components of an independent set of fish that were not significantly different from chemically derived measurements of

these components. These models should allow the rapid, nondestructive estimation of body composition of largemouth bass varying in size and condition without the added cost and processing time associated with measurement of TOBEC, although large prediction errors might prevent the detection of ecologically significant differences in body composition. However, with additional data involving narrower fish-size ranges and constant temperatures for the development of prediction equations, TOBEC may improve the prediction accuracy of body composition estimates for largemouth bass.

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