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### Modeling Predation as a Source of Mortality for Piscivorous Fishes in a Southeastern U.S. Reservoir

Scott W. Raborn<sup>\*1</sup>, Leandro E. Miranda, and M. Todd Driscoll<sup>2</sup>

Mississippi Cooperative Fish and Wildlife Research Unit, Post Office Box 9691, Mississippi State, Mississippi 39762, USA

#### Abstract

We investigated the possibility that the survival of piscivorous fishes in **Norris** Reservoir, Tennessee, was reduced due to individuals being consumed by other piscivorous fishes. Black basses (smallmouth bass *Micropterus dolomieu*, spotted bass *M. punctulatus*, and largemouth bass *M. salmoides*) were the only piscivores consumed and were eaten only by other black basses. The total prey consumption for black bass populations was estimated via bioenergetics models. The effect of density-dependent survival was incorporated by modeling survival–density relationships based on estimates of densities in consecutive years. Survival for black basses decreased with increasing density. As a result, predation was projected to be a compensatory source of mortality that failed to reduce overall survival, even though we estimated that 85% of black basses were consumed during one year. The projections from the survival–density models indicated that these species were resistant to decreases in overall survival when densities and levels of predation were varied.

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\* Corresponding author: [raborn@lacollege.edu](mailto:raborn@lacollege.edu)

<sup>1</sup>Present address: Louisiana College, 1140 College Drive, Box 552, Pineville, Louisiana 71359, USA

<sup>2</sup>Present address: Texas Parks and Wildlife, Route 2, Box 535, Jasper, Texas 75951, USA

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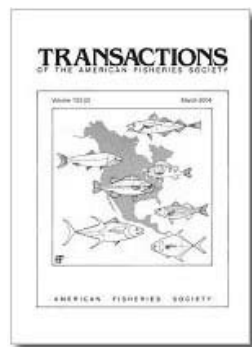
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