

*From the 1999 Southern Division of the American Fisheries Society
Midyear Meeting held in Chattanooga, Tennessee.*

Exploring Competition Between Striped Bass and Selected Predatory Fishes in Norris Reservoir: Dividends of Reduced Striped Bass Stocking

L.E. Miranda, S.W. Raborn, and M.T. Driscoll, Mississippi Cooperative Fish and Wildlife Research Unit, P.O. Box 9691, Mississippi State, Mississippi 39762; Voice 601-325-3217; FAX 601-325-8726; E-Mail smiranda@cfr.msstate.edu or sraborn@cfr.msstate.edu

Keywords: striped bass, stocking, reservoirs, prey inadequacy, supply-demand, fish production, bioenergetics

If density of striped bass in Norris Reservoir is reduced or eliminated through modifications of the stocking program, additional prey would become available to native game fishes. Such release of prey once tied up in striped bass biomass and its maintenance, may partially or entirely be shifted to other predators. An increase in biomass of other predators would be a function of the amount of prey that is released, the efficiency with which that prey is captured, and the efficiency with which the prey is transformed into additional biomass. We simulated reductions in striped bass prey demand by reducing current levels of striped bass biomass by several levels ranging from 0 to 0.75. Capture efficiency was unknown so we modeled several values ranging from 1 to 0.125. A bioenergetics model was used to estimate assimilation efficiency of the native species, as well as total prey demand by the modeled biomass of striped bass. Our results indicated that reducing striped bass biomass would increase supply-demand ratios by as much as 25% if striped bass were removed. Such removal would increase prey supply in the reservoir by an estimated 63.5 kg/ha. This additional supply would increase biomass of native game fish by as much as 12.7 kg/ha, or about 20%, if capture efficiency is 1.0. Nevertheless, it is unrealistic to assume that all the prey released by striped bass would be consumed by other predators, thus smaller increases should be expected.

[Back to Abstract Index](#)

[Back to Norris Reservoir Index](#)