



Tournament Mortality of Smallmouth Bass and Largemouth Bass in Tennessee Reservoirs

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The high incidence of voluntary catch-and-release by bass fishermen and the mandatory release of tournament-caught fish presuppose that angled fish recover quickly and suffer low mortality rates. Under ideal conditions, total mortality rates at bass tournaments can be kept low (e.g., $\leq 14\%$). Conversely, poorly managed tournaments and high temperatures can result in high ($\geq 26\%$) mortality of released fish. Although many authors have reported initial mortality rates (i.e., at weigh-in), that rate alone is not an indicator of tournament-associated mortality because most bass are reported alive when released after tournament weigh-ins.

There is reason to expect that different species of black bass respond differently to tournament angling. The literature on black bass hooking mortality, tournament mortality, and stress physiology pertains almost wholly to largemouth bass. However, smallmouth bass prefer colder temperatures and are less eurythermal than largemouth bass. Environmental factors that influence the mortality of largemouth bass in tournaments include temperature and livewell confinement.

Although some data exist to describe the catch and effort statistics associated with some tournaments in Tennessee, no formal permitting process is required to stage a tournament, and reporting the results of tournaments is voluntary. Therefore, no accurate estimates of tournament activity exist for any reservoir in the state. Collecting this type of information would be the first step in answering the bigger question: "What effect do tournaments have on reservoir bass populations?"

Finally, the effect of displacement of smallmouth bass resulting from tournament activity has received little attention. It is unknown how smallmouth bass respond after being released at tournaments in large, dendritic Tennessee reservoirs, where displacement distances could be much longer than in previous studies. Also, previous studies of site fidelity used fish that were collected using sampling gear, not angled fish that were subjected to the stresses of livewell containment and tournament weigh-ins.

The specific objectives of this ongoing research project are to (1) estimate annual black bass tournament activity on two reservoirs in Tennessee; (2) measure initial mortality resulting from tournaments on those same two reservoirs; (3) examine the influence of environmental factors such as temperature, duration of livewell confinement, and livewell additives on mortality of smallmouth bass under simulated tournament conditions; and (4) examine home-range fidelity for smallmouth bass displaced as a result of tournament activity.

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