

Public Abstract

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Title: Habitat selection, movement, and home range of largemouth bass (*Micropterus salmoides*) following a habitat enhancement project in Table Rock Lake, Missouri

Deteriorating reservoir fish habitat is a concern throughout the United States so the Missouri Department of Conservation and cooperators placed approximately 2,000 augmentation structures (trees, stumps, and rock piles) throughout Table Rock Lake, Missouri to improve fish habitat for largemouth bass (*Micropterus salmoides*). Our objectives were to determine habitat selection, movement, and home range of largemouth bass following this enhancement. Seventy largemouth bass (>380 mm total length) were implanted with radio transmitters and relocated monthly for one year. Results from our discrete choice models suggest largemouth bass select intermediate depths (2-7 m) in areas near shore (<25 m) regardless of diel period and season, however structure was only selected during summer and fall. During these seasons, complex (tree) augmentation structures were selected at the same rate as natural woody structure, which suggests the addition of augmentation structures may be able to supplement habitat loss in large reservoirs. Movement rates were higher during day than night across all months, with peak movement rates during June and July (mean=83.5 m/h) when water temperatures were greatest. Annual core (50%) home range estimates averaged 7.9 ha with longer fish having smaller home ranges ($r = -0.64$, $P = 0.03$). However, home range size did not differ in the presence of augmentation structure compared to those without. This project was a pilot program of the National Fish Habitat partnership and will help identify areas that may be most suitable for habitat augmentation structures to improve reservoir fish populations through reservoir habitat enhancements.