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

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ABSTRACT

Over 2,000 augmentation structures (trees, stumps, and rock piles) have been distributed throughout Table Rock Lake, Missouri. Our objectives were to determine habitat selection, movement, and home range of largemouth bass (Micropterus salmoides). Seventy largemouth bass (>380 mm) were implanted with radio transmitters and relocated monthly for one year. Top 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 may suggest 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 home range estimates averaged 7.9 ha with longer fish having smaller home ranges ($r = -0.64$, $P = 0.03$). 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.