

Public Abstract

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Title: MOVEMENT, HABITAT USE, AND SPAWNING CHARACTERISTICS OF  
FLATHEAD AND BLUE CATFISH ON THE LOWER MISSOURI RIVER AND  
TRIBUTARIES

Flathead and blue catfish are abundant in the Missouri River and adjacent tributaries and annual angler catch rates within many of these tributaries have been high (>30%) in recent years. Current management of flathead and blue catfish in Missouri is limited to statewide harvest restrictions (5 fish/day). However, state biologists have shown interest in creating special harvest regulations that would facilitate a trophy catfish fishery in an interior reach of the Missouri River. Knowledge of fish movement patterns can contribute to effective management in such cases. Fish exhibiting limited movement are more likely to respond positively to management strategies compared with more mobile species. To define boundaries to management, tracking data is needed to understand how far adult catfish move throughout the year.

I tracked individual flathead and blue catfish in the Missouri River throughout the year in 2006 and 2007. By mapping GPS points of located fish I was able to monitor upstream and downstream movements of individuals. By tracking individuals throughout the year, I was able to define periods during which fish tended to migrate and other periods during which fish displayed more restricted-movement. During the summer/fall period, I determined home range size and examined habitat selection. During the spawning period (May 15-July 15) in 2007, I recaptured individuals and collected blood samples to determine whether catfish use the Missouri River to spawn.

Both species displayed a diversity of movement patterns throughout the year. In the spring, most individuals migrated upstream to an area used during the spawning period. Movement distances varied greatly, and several flathead and blue catfish traveled several hundred miles upstream during May and June. During the summer/fall period (July 15-Nov 15), most individuals used small, restricted areas of river. Individuals selected deep habitats associated with wing-dikes, L-dikes, and revetment. In October and November, most individuals migrated downstream to an area where they remained throughout the overwintering period (Nov 15-March 15).

The results of this study suggest that both species have a propensity for long-range movement in large rivers. Special harvest restriction that apply to a relatively small section of river (<60 miles) may fail to produce expected results if individuals migrate outside of regulated waters. A portion of the catfish I tracked spent the entire year in small, restricted areas of river and may depend on both natural and artificial structures to feed, grow, and spawn. Future management may seek to incorporate small-scale habitat evaluations while recognizing the importance of river connectivity and flow to migratory catfishes.