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**Role of the Woody Corridor in Levee Protection along the Missouri River in 1993**

ABSTRACT

A 353-mile segment along the Missouri River was investigated to determine the relationships between levee damage and woody corridor during the flood of 1993.

Woody corridors between riverbanks and primary levees played a significant role in the reduction or prevention of flood-related damage to levees. In this 353-mile segment forty-one percent of levee failures occurred in areas with no woody corridor present, while 74 and 83 percent of failures occurred where woody corridor widths were less than 300 and 500 feet, respectively. The median failure length of a levee failure with a woody corridor was 50.3 percent shorter than the median failure length with no woody corridor present. Levees that did not fail had significantly wider median woody corridor widths than those levees that did fail. Eligibility for the Corps of Engineers levee maintenance program was not a significant factor in mitigating levee damage. Discontinuities in woody corridors played a role in 27.5 percent of the levee failures in the 353-mile study segment.

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Dr. John Dwyer is an associate professor and forest management specialist with the Department of Forestry at the University of Missouri. Dr. Dwyer graduated from Purdue University with a bachelor in forest production, a masters degree in business administration from Southeastern Oklahoma State University, and a doctorate in forest management/economics from the University of Missouri. Prior to entering into academia Dr. Dwyer held several managerial positions with Weyerhaeuser Company in their timberland operations in Southwest Arkansas and Southeast Oklahoma. Dr. Dwyer's interest in big rivers came about as the result of the Great Flood of 1993. At the height of the flood Dr. Dwyer took a helicopter ride to survey the damages along the Missouri and Mississippi Rivers and his interest was piqued as the result of witnessing anecdotally that levees with tree corridors on the riverside did not break and if they did break the break seemed smaller than if there was no tree corridor. As a result, subsequent funding was secured through the University of Missouri Center for Agroforestry under the U.S. EPA Agroforestry Floodplain Initiative. The overall goal of the Agroforestry Floodplain Program is to research and demonstrate agroforestry's ability to generate income, reduce non-point sources of pollution, sequester carbon, create and improve wildlife habitat and mitigate against the impacts of periodic flooding.