

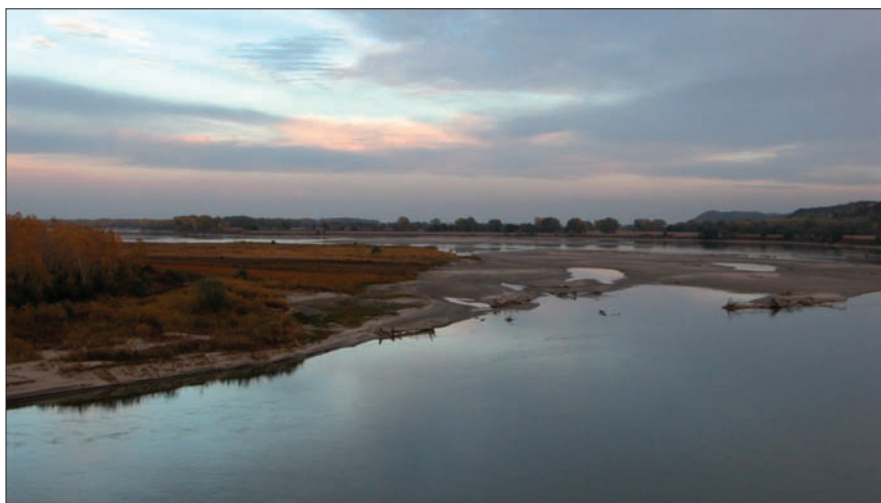
Columbia Environmental Research Center

Publication Brief

USGS Report Provides A Multiscale Classification Framework for the Missouri National Recreational River

A new report by the U.S. Geological Survey presents a classification system for the Missouri National Recreational River. "Geomorphic Classification and Assessment of Channel Dynamics in the Missouri National Recreational River, South Dakota and Nebraska", provides a framework for understanding river form and process in the Missouri National Recreational River (MNRR). The report examines how naturally occurring clusters of channel characteristics are indicative of discrete sets of river processes. This classification will be useful for understanding the context of bank erosion in the MNRR river segments and has applications in management and rehabilitation decisions.

The report documents channel characteristics of the river in the 39-mile and 59-mile segments of the MNRR collected from high-resolution 1999 aerial photography. Bank erosion rates and vegetated and bare sand bar locations are also presented for both MNRR segments from aerial photography for 1993 to 2003. Channel changes over longer time scales in the MNRR were analyzed using imagery and maps from 1993-2004, 1941 and 1894. The report's multivariate classification identifies a hierarchy of naturally occurring clusters of reach-scale channel characteristics. The



Mulberry Bend, in the 59-mile segment of the Missouri National Recreational River.

simplest level of the classification divides the river from segments into reaches characterized by single and multithread channels. Additional hierarchical levels established 4-part and 10-part classifications. The classifications were tested by exploring the persistence of classified units over time and by evaluating variation of bank erosion rates by class. The report's classification system presents a physical framework that can be applied by river managers in the prioritization and design of bank stabilization projects, design of habitat rehabilitation projects, and stratification of monitoring and assessment sampling programs.

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Elliott, C.M. and Jacobson, R.B. 2006. Geomorphic classification and assessment of channel dynamics in the Missouri National Recreational River, South Dakota and Nebraska U.S. Geological Survey.

This report is available online at: <http://pubs.usgs.gov/sir/2006/5313/>