

Plains and Prairie Potholes Landscape Conservation Cooperative

Examining Restoration and Management Potential along the Lower Missouri River

The Missouri River is an important ecological thoroughfare that connects communities across the Plains and Prairie Potholes and Eastern Tallgrass Prairie and Big Rivers Landscape Conservation Cooperatives (LCC).

These LCCs are science driven partnerships of federal, state, tribal and non-governmental agencies and organizations vested in advancing science to inform decision-making about natural resources conservation and management.

The lower Missouri River, between Gavin's Point Dam and its confluence with the Mississippi River is the largest free-flowing river reach in the conterminous United States.

The lower Missouri River corridor passes through four states and encompasses nearly 1.5 million acres of bottomland that wind through the nation's heartland. The river has long been an important means of transportation, recreation, and commerce linking the Midwest to the West. Additionally, it forms a rare stretch of nearly contiguous habitat for fish, wildlife and plants.

The lower Missouri River is highly influenced by upstream reservoirs and water control, which impacts the river's physical and ecological functions. These alterations pose significant challenges for those that live and make their livelihood along the river, as well as for the



Aerial view of Missouri River and Boyer Chute National Wildlife Refuge taken in July 2011. U.S. Fish and Wildlife Service photo.

maintenance and protection of wildlife habitat.

Extensive flooding throughout the Missouri River basin in 1993 and again in 2011 raised concerns among conservationists about appropriate land-use, river and floodwater management, and the associated threats to communities and interests within the floodplain corridor.

Applying new technology to understand river ecology

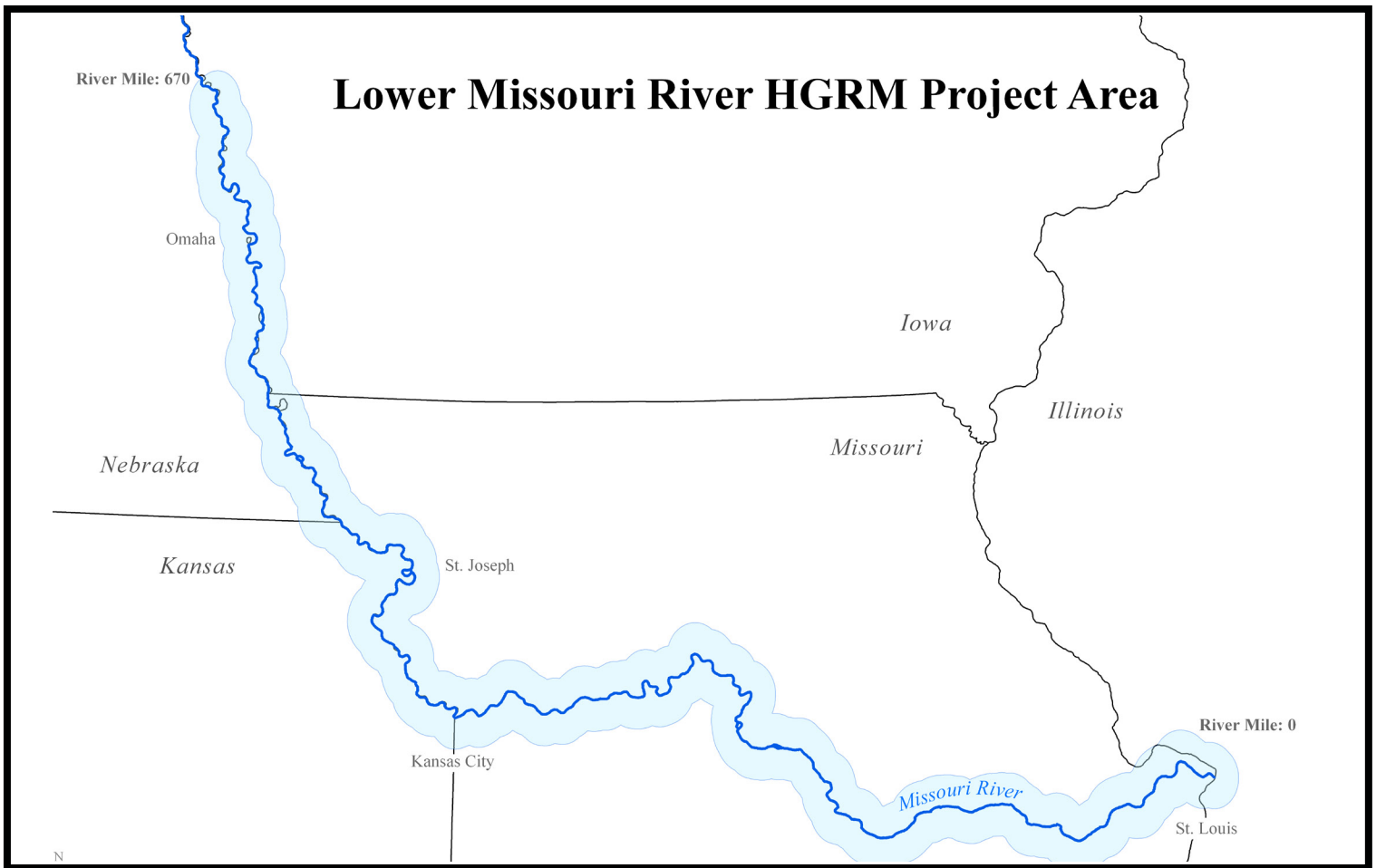
To address these concerns, Hydrogeomorphic Restoration/Management Methodology (HGRM) is being applied along 670 miles of the river from Decatur, Nebraska to St. Louis, Missouri. Using this method, engineers and ecologists are examining the restoration and management potential of this regulated, yet still untamed system.

Results of this research will help guide land and water uses within the corridor aimed at

maximizing ecological functionality while considering flood control, restoration potential, recreation, navigation, and other interests along the river.

The lower Missouri River contains countless conservation properties and efforts maintained by local, state and federal agencies, nonprofit groups and private entities. The landscape features a diverse mix of riverine, floodplain, prairie, wetland and forest habitats that help support healthy populations of native fish and wildlife species, endangered species, and many recreational activities.

Many conservation lands along the corridor play an important role in attenuating flood peaks while also providing critical fish and wildlife habitats. A strategic approach to restoration and flood control along the Missouri River is needed to provide key ecosystem services and maximize the benefits to a diverse group of stakeholders.



Hydrogeomorphic Restoration Management Methodology (HGRM) is being applied along 670 miles of the river from Decatur, Nebraska to St. Louis, Missouri.

Recently, HGRM methodology has been used to understand and evaluate ecosystem restoration and management options for large river systems in North America including those affected by upstream dams and reservoirs. HGRM evaluations analyze historic and contemporary information about physical features of landscapes ranging in scale from site-specific tracts such as national wildlife refuge lands, to regional settings that include public and private conservation lands, to large contiguous watersheds and floodplains.

Why it works

The HGRM approach is especially applicable to the lower Missouri River for several reasons. It provides a comprehensive ecological context of a region, and a basis for developing habitat objectives for conservation

actions. The approach also identifies options to emulate natural hydrologic and vegetation/animal communities patterns and dynamics, and offers potential to mitigate and improve alterations to the region. Lastly, this method incorporates state-of-the-art scientific knowledge of ecological processes and requirements of key fish and wildlife species in the region and identifies key uncertainties and future monitoring needs.

This effort will help ensure that societal and conservation interests are well informed and coordinated as potential opportunities are evaluated for conservation and flood control delivery along the lower Missouri River.

Support from the Plains and Prairie Pothole and Eastern Tallgrass Prairie and Big Rivers

LCCs helped make this project possible and highlights the value of a coordinated landscape scale approach to addressing complex conservation and societal challenges across the country.

About LCCs

LCC partners are working to develop and apply the scientific tools necessary to determine how climate change, coupled with existing stressors may affect the health and productivity of shared natural resources.

Contact

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For more information about additional research supported by the Plains and Prairie Potholes LCC visit plainsandprairiepotholeslcc.org.