



US Army Corps
of Engineers
Rock Island District

Information Paper

K. UMRS Ecosystem Adaptive Mgmt. Plan

Upper Mississippi River System - Navigation and Ecosystem Sustainability Program

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Location/Description

The program area comprises the Upper Mississippi River System, as defined by Congress in the Water Resources Development Act of 1986 (WRDA 1986), which includes the Upper Mississippi River from Minneapolis, Minnesota, to Cairo, Illinois; the Illinois Waterway from Chicago to Grafton, Illinois; and navigable portions of the Minnesota, St. Croix, Black and Kaskaskia Rivers. This multi-use resource supports an extensive navigation system (made up of 1200 miles of 9 foot channel and 37 lock and dam sites), a diverse ecosystem (2.7 million acres of habitat supporting hundreds of fish and wildlife species), floodplain agriculture, recreation and tourism. Based on the recommendation of the recently completed UMR-IWW System Navigation Feasibility Study that examined system needs over the next 50 years, the Navigation and Ecosystem Sustainability Program (NESP) was implemented to achieve the dual purposes of UMRS ecosystem restoration and navigation improvements. The UMRS Ecosystem Adaptive Management Plan is one of 23 initial NESP ecological component projects being implemented under this new UMRS program.

An implementation strategy is needed to improve habitat in the system while simultaneously allowing for modification of restoration measures to optimize performance. This project will develop a process that efficiently coordinates projects across multiple environmental restoration programs. Existing and new information, models, and monitoring efforts will be used to generate a scientifically valid and quantitative process of prioritizing, sequencing, and modifying projects through the use of adaptive management. Another key component of this project is the development and refinement of valuation techniques to quantify ecosystem goods and services. This project will result in enhanced and informed restoration and management of the physical, functional, and biological components of the UMRS ecosystem.

Problem Statement

Many physical factors have combined to degrade the system including:

- Tributary channelization and sediment loads
- Accelerated, relocated delta formations
- High sedimentation rates in backwaters
- Reduced bathymetric/planform diversity
- Altered hydrologic regime
- High water levels during the growing season
- Elevated hydraulic residence times
- Wind-driven wave action/sediment resuspension
- Shoreline erosion
- Reduced floodplain connectivity
- Increased nutrient input

Ecological responses to these physical conditions include:

- Habitat loss, fragmentation, and reduced diversity
- Decreased use by fish and migrating waterfowl
- Exotic species invasion
- Decreased population numbers / extirpation

Current Status

The Corps has developed a multi-agency Science Panel to assist the Corps. The Science Panel is a Corps' mechanism for integrating scientific knowledge and experience for the purpose of understanding and adaptively managing UMRS.

The Science Panel finished a report of recommendations for adaptive management in August 2006. Coordination among other restoration programs, stakeholders and Corps PDTs is underway and will be the focus of this year's activities. Additional monitoring, modeling, and planning efforts will be implemented in FY07.

Authority

The Water Resources Development Act of 2007, TITLE VIII Upper Mississippi River and Illinois Waterway System, authorized the project.