



US Army Corps  
of Engineers  
Rock Island District

# Information Paper

## E. Systemic Environmental Mitigation

### Upper Mississippi River System - Navigation and Ecosystem Sustainability Program

#### Contacts

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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 Systemic Environmental Mitigation is one of 8 initial NESP navigation efficiency component projects being implemented under this new UMRS program.

The mitigation plan includes avoid, minimize, and compensatory mitigation measures. The schedule for proposed implementation of mitigation measures will be concurrent with the proposed navigation improvement alternatives. Mitigation measures will be monitored and their performance will be evaluated to enable learning and subsequent application of more ecologically effective measures.

#### Problem Statement

An increase in navigation traffic leads to the degradation of the river ecosystem and to the destruction of near-shore cultural resources because of:

- Increased sediment deposition in side channels and backwaters
- Increased sediment resuspension in main channel borders
- Increased entrainment of larval and juvenile fish
- Increased bank erosion from wave action from boat wakes

These problems contribute to the following responses:

- Reduced habitat and abundance of aquatic life in backwaters and secondary channels
- Reduced abundance of fish in the main channel of the river
- Reduced growth of submersed aquatic vegetation in the main channel borders
- Reduced quality of riparian and bankline habitat
- Potential adverse effects on mussels
- Loss of historic properties and cultural resources along the river banks

#### Current Status

The Corps is working with the multi-agency Navigation Environmental Coordination Committee in the implementation of the mitigation plan. Activities include:

- *Submersed Aquatic Vegetation (SAV) Sampling* – In FY 08, the final of three years of SAV sampling will be performed in main channel border areas identified by the NavSAV model as potential plant impact zones.
- *Fish Entrainment Sampling* - Fish entrainment sampling will be completed after the collection of the winter samples. Entrainment sampling involves deploying a large net behind a loaded towboat to capture adult and juvenile fish entrained by the propeller.
- *Cultural Resources* – The Corps and the National Park Service will complete HAER (Historic American Engineering Record) documentation for the dams of the IWW. Work will also begin on a Project WET book about the history of the Upper Mississippi River System.

#### Authority

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