



US Army Corps  
of Engineers  
St. Paul District

# Information Paper

## R1. Pool 5 Water Level Management

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

#### Contact

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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 Pool 5 Water Level Management Project is one of 23 initial NESP ecological component projects being implemented under this new UMRS program.

Pool 5 is 14.6 miles long, and extends from river mile 738.2 to river mile 752.8. It is located in Buffalo County, Wisconsin, and Wabasha and Winona Counties, Minnesota

#### Problem Statement

Emergent aquatic plants in Pool 5 have declined in extent and abundance since the 1940s. Low growing season water levels (like occurred prior to impoundment) are needed to allow plants to germinate from seed and to re-establish. Two growing season drawdowns of Pool 5 (2005-06) were proposed to re-establish emergent aquatic plants. The drawdowns should also oxidize and consolidate bottom sediments, improving conditions for submersed aquatic plants following

#### Current Status

A drawdown was conducted in the summer of 2005 using O & M funds. The following monitoring was conducted (NESP):

- Hydrodynamics (flow velocity and distribution)
- Sediment transport
- Water quality
- Vegetation response
- Wildlife (mussels, birds, amphibians, macroinvertebrates)
- Recreational usage

The 2005 Pool 5 drawdown was a maximum of 1.5 feet at the dam, with a maximum drawdown of 1.0 foot at the primary control point (Alma gage). It began on June 13 and ended on September 30, 2005. It had a very positive vegetative response and encountered no major problems. Some concerns were reported regarding navigation and recreational access. Mussel mortality was observed and is being evaluated. The planning and implementation was accomplished with Operation & Maintenance (O&M) funds. A second year drawdown in Pool 5 began on June 12, 2006, but was terminated on July 9 as a result of main channel conditions and low river flows. Monitoring for vegetative response and mussel impacts continued through the summer using NESP funds. A major effort to estimate the pool-wide mussel population was conducted.

Currently, a draft Project Implementation Report (PIR) is being prepared for possible implementation of small-scale water level management in Pool 5 in 2009, if construction funding is received. The PIR will also evaluate permanent changes to the reservoir regulation manual for Pool 5, to allow for a regulating protocol which enhances environmental restoration benefits. A pool-scale drawdown of Pool 5 is not expected before 2012, at the earliest. The draft PIR is planned for ITR in July 2008.

#### Authority

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