



# Upper Mississippi River Basin Association Water Quality Program: 2009 Report

## Protecting Water Quality Through Interstate Cooperation

### Background: The Upper Mississippi River and Water Quality

The Mississippi River, America's great river, is central to the environment, economy and quality of life in the Upper Midwest. The Upper Mississippi River (UMR) is that portion of the river flowing from Lake Itasca in northern Minnesota to the confluence with the Ohio River at the southern tip of Illinois, accounting for over half the length of the entire Mississippi River.

The UMR hosts many wildlife species, including over 300 migratory bird, 150 fish, 50 mammal, and 30 mussel species. Approximately 300,000 floodplain acres are within the National Wildlife Refuge System, and states manage roughly 140,000 additional acres. These abundant natural resources help draw millions of recreational visits to the UMR each year.

In addition to being a vital natural resource, the UMR is also a critical commercial corridor and irreplaceable water source. Twenty-nine locks and dams help support the shipping of over 110 million tons of commodities per year. Well over 2 million people rely on the UMR for drinking water, and the river also supplies water to numerous power plants and other industrial operations along its banks.

**Protecting and improving water quality is important to sustaining these multiple uses of the UMR as a diverse ecosystem, recreational area, commercial artery, and water supply.**

While great progress has been made in improving the UMR's water quality since the passage of the Clean Water Act (CWA) in 1972, challenges still exist in implementing the CWA effectively and efficiently on the river, and in protecting water quality gains made to date.

**The five UMR states, utilizing the Upper Mississippi River Basin Association (UMRBA) and in collaboration with the United States Environmental Protection Agency (US EPA), are working jointly to improve and protect water quality on the interstate UMR via more coordinated CWA implementation.**

### Challenges in Protecting Water Quality and Implementing the Clean Water Act on the UMR



**Pool 8 demonstrates the lateral complexity present in some areas of the UMR.** (USGS image)

#### *Scale, Diversity, Complexity, and Basin Influence*

Along its length, the UMR changes dramatically in physical structure, flow, and water quality. It is also influenced by land use throughout the approximately 189,000 square mile basin that drains to the UMR.

Above the Quad Cities, the UMR retains substantial lateral diversity, with side channels, backwaters, and other off-channel areas. Further downstream, there is less lateral diversity and levees separate much of the river from its floodplain. These levees, along with the UMR's locks and dams, are significant structural alterations that must be considered in establishing water quality and ecosystem integrity goals for the river.



**The Upper Mississippi River, including its basin and tributaries.** (UMRBA image)

Twelve major UMR tributaries, including the Illinois, Iowa, Missouri, and Wisconsin rivers, as well as numerous smaller tributaries, significantly influence UMR water quality and flow. Nutrients, sediment, and other pollutant levels are directly affected by contributions from tributaries, which are in turn influenced by basin-wide land use. Also, average annual discharge increases from 9,200 cubic feet per second (cfs) at St. Paul, Minnesota to 205,000 cfs at Thebes, Illinois, as tributaries add to the river's flow.

**The river's scale, complexity, and diversity, as well as basin-wide influences, make it challenging to adapt the states' existing CWA approaches, developed primarily for intrastate waters, to the UMR.**

***Interstate and Inter-Jurisdictional Issues***

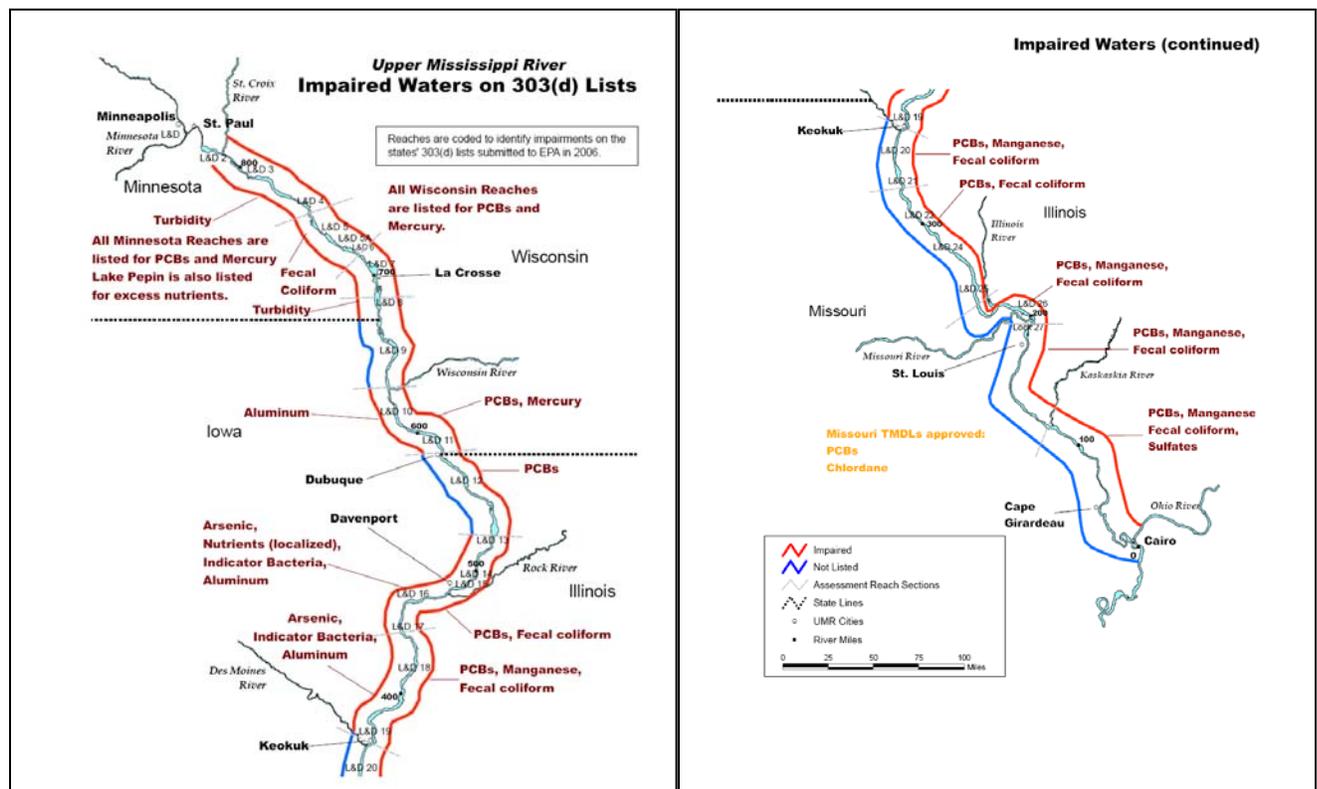
The states implement CWA regulatory programs subject to US EPA's direction, oversight, and approval. The UMR presents a particular challenge to consistent and effective CWA implementation, as it is a border river for five states and also divides US EPA Regions 5 and 7.

There are variations among the states in all major elements of their UMR water quality programs, including use designations, water quality criteria, monitoring, data analysis, assessment methodologies and impairment listings. As a result, bordering states may characterize the same reach of the river differently. This is illustrated in a comparison of the states' CWA impairment listings for the UMR (see below).

**Disparities in impairment decisions may create a mixed message for stakeholders and the public at large, lead to disparate regulatory expectations (e.g. for TMDLs and permits) among states, and undermine the credibility of regulatory agencies.**



The confluence with the Missouri River illustrates major tributary effects on the UMR. (USDA image)



The states' 2006 impairment listings illustrate inconsistencies in CWA characterization of the UMR among states. (UMRBA images)

## Interstate Collaboration: The Role of UMRBA and its Water Quality Groups

**The five states recognize the multiple challenges to improving the UMR's water quality, and know that progress will require a collaborative, systemic approach.** In August 2007, the UMR Governors articulated their vision for collaboration:

*We are committed not only to the protection of the River's water quality, but we are also committed to doing so in a coordinated manner. .... We are therefore supporting the coordination of water quality monitoring, assessment, and standards for the Upper Mississippi River by the States of Illinois, Iowa, Minnesota, Missouri, and Wisconsin and the Upper Mississippi River Basin Association. This approach will allow the Clean Water Act to be implemented on the Upper Mississippi River in a more coordinated and consistent fashion than has ever been possible previously.*

UMRBA was established in 1981 by the Governors to facilitate dialogue and cooperative action among the five states and to work with federal agencies on inter-jurisdictional river programs and policies. Therefore, in issuing their 2007 statement, the Governors recognized that UMRBA is uniquely positioned to facilitate coordinated, interstate CWA implementation on the river.

Working under UMRBA's Board of Directors, two water quality groups support collaborative UMR activities. UMRBA's Water Quality Task Force, including state and US EPA staff, addresses CWA technical and implementation issues. The Water Quality Executive Committee, composed of water quality administrators from the five states and two US EPA regions, provides policy-level coordination. Through these groups, UMRBA has become the primary venue for UMR water quality coordination.

### UMRBA Water Quality Program Activities and Accomplishments in 2008-2009

#### ***Examining and Refining Designated Uses for the UMR***

Designated uses (such as support of aquatic communities, recreation, drinking water, etc.) along with water quality criteria and an anti-degradation policy, compose states' CWA water quality standards. The Task Force began work in 2007 to examine designated uses assigned to the UMR, with the goal of identifying potential modifications to improve both water quality outcomes and interstate consistency. The project has moved forward in 2008-2009 with a focus on aquatic life uses. In particular, the Task Force is interested in CWA approaches that would better characterize and protect the UMR's diverse aquatic habitats, including both flowing channel and off channel areas, without becoming overly complex or expensive to implement.

The Task Force has identified the aquatic habitat sampling strata used by the Long Term Resource Monitoring Program (LTRMP) as the best available starting point in developing possible aquatic life use sub-category distinctions (such as for backwaters and other off-channel areas). The group is now examining data from the LTRMP and other UMR monitoring efforts to further refine potential distinctions. This project is staffed via a two-year intergovernmental personnel agreement with US EPA, and will result in recommendations to the states regarding modifications to aquatic life use designations.

#### ***Consulting on Assessments and Impaired Waters Listings for the UMR***

The Task Force provides a forum for the states to consult concerning their biennial UMR water quality assessments and impairment listings. These consultations facilitate information exchange and, in some cases, have helped contribute to more consistent impairment decisions across states. Recent discussions on the 2008 assessment and listing cycle have helped inform impairment decisions related to suspended sediments, indicator bacteria, mercury, and perfluorochemicals, among other contaminants. A consistent set of minimum UMR assessment reaches, adopted by the states in 2003, facilitates these consultations.

#### ***Integration of Biological Approaches***

Incorporating biological approaches into the states' UMR CWA programs has emerged as a primary goal of the Task Force. Recent developments in the application of biological techniques on large rivers appear to

offer promise for the UMR. The Task Force's interest was one of the driving forces behind a May 2009 workshop that examined the potential uses of UMR biological indicators in cross-programmatic context.

#### ***Cross-Programmatic Collaboration with Ecosystem Restoration Programs***

The Task Force and Executive Committee have participated in ongoing efforts to foster enhanced communication and collaboration between water quality and ecosystem restoration programs on the UMR. This has included cross-programmatic workshops to explore policy and practice interfaces in 2008, the above-mentioned biological indicators workshop in 2009, CWA staff engagement in ecosystem objective-setting efforts, and the periodic involvement of restoration program staff in Task Force meetings.

#### ***Engagement with Water Quality Stakeholder Groups***

As their work evolves, the Task Force and Executive Committee have sought to engage with a broader range of UMR water quality stakeholder groups. In particular, the Task Force and the Executive Committee have initiated communication with the Mississippi River Water Quality Collaborative, a coalition of nonprofit groups supported by the McKnight Foundation.

### **Goals for UMRBA's Water Quality Program in 2010**

#### ***Continue Progress on Aquatic Life Use Designations***

The Task Force will continue examining potential modifications to UMR aquatic life use designations. Next steps will include additional data analysis, developing a preliminary report and recommendations, and scoping future work extending beyond the current intergovernmental personnel agreement.

#### ***Multi-State Water Quality Management Planning Grant Project***

The UMRBA has recently submitted a proposal to all five UMR states for water quality planning work under CWA Section 604(b). This proposed project will support efforts in three areas: 1) integration of biological approaches into CWA assessments, 2) examination of "local" impacts of nutrients on the UMR, and 3) ongoing cross-programmatic collaboration activities.

#### ***Consultation on 2010 Assessments and Impairment Listings***

As a core function of the Task Force, the states will consult regarding their UMR assessment and impairment decisions for the 2010 reporting cycle.

#### ***Build Connections with Water Quality Stakeholder Groups***

The Task Force and Executive Committee will continue their effort to enhance communications and connections with UMR water quality stakeholder groups.

#### ***Seek Long-Term, Stable Federal Support for UMR Water Quality Work***

To date, UMR water quality coordination has been supported by annual state contributions and a series of short-term federal grants. Even if 604(b) grants fund additional near-term efforts, the need remains for an ongoing, stable federal funding source to supplement the states' investment in the UMR, similar to the federal commitment to other large, nationally significant aquatic ecosystems. UMRBA will continue to seek support for long-term, stable federal funding of interstate water quality work on the UMR.

### **For More Information**

For more information about the UMRBA's Water Quality Programs, please visit UMRBA's water quality web page at <http://www.umrba.org/wq.htm> or contact Dave Hokanson, UMRBA Water Quality Program Director (651-224-2880 or [dhokanson@umrba.org](mailto:dhokanson@umrba.org)).

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