

US EPA Mid-Continent Ecology Division

Research Project Summary

Environmental Monitoring and Assessment of Great River Ecosystems

Overview

EPA Collaborates with States to Assess the Mississippi River System

The U.S. Environmental Protection Agency's Office of Research and Development is conducting an ambitious research program to improve the science and practice of assessing ecological conditions in the Mississippi River system. The program will yield an unprecedented baseline of ecological conditions to which future conditions may be compared. Such information is required to understand the consequences of management decisions and is the basis for restoration accountability. In addition, the program is assisting states in their Clean Water Act responsibilities by demonstrating cost-effective approaches for assessing large inter-state rivers. Since 2004, state and federal crews have been sampling biological assemblages, nutrients, contaminants, and aquatic habitats of the Upper Mississippi, Ohio, and Missouri Rivers - from Montana to Pennsylvania and from Minnesota to Missouri. In 2007, sampling will begin in the Lower Mississippi River. This work is part of EPA's Environmental Monitoring and Assessment Program (EMAP), a national program working in partnership with states to research and demonstrate scientifically-robust characterizations of aquatic resources.

Because the size and complexity of the Mississippi River system make it impossible to measure everything everywhere, a statistical process similar to taking a public opinion survey, is used. Measurements made at relatively few randomly selected sites are representative of conditions throughout the river. Figure 1 shows how sites are distributed throughout the Upper Mississippi River system. In most cases, a minimum of 30 sites are collected in each state.

Numerous partners are participating in the research on the Upper Mississippi River system. Scientists from several EPA Labs and Region Offices and the USGS Biological Resources Division and Water Sciences Centers are helping to collect and analyze samples. State partners include the Ohio River Valley Water Sanitation Commission; Departments of Natural Resources in Wisconsin, Minnesota, Illinois, and Iowa; the Missouri Department of Conservation; the Nebraska Game and Fish Commission; North Dakota Department of Health; the Universities of Iowa and Louisville; and Missouri State University. In 2007, similar partnerships are being created with Lower Mississippi River states.

Key Products

Program products include indicators of condition, including reference (or least disturbed) conditions. Reference data are required to quantify changes in river conditions over time or divergence from management or restoration goals. While current condition reports are important, developing methods that efficiently yield representative and relevant data is the ultimate program objective. Reports and reference condition characterization will be completed at various state and river scales.

The program's website (www.epa.gov/emap/greatriver) contains copies of our regular newsletter, the Field Operations Manual (2006; EPA/620/R-06/002), presentations from a conference on river reference conditions, and other program information.

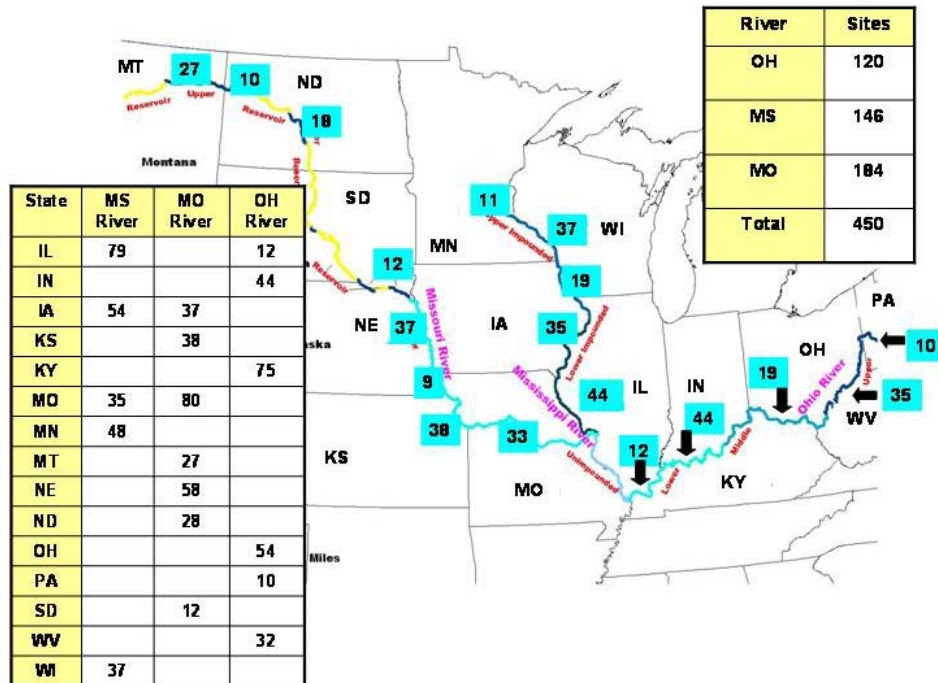


Figure 1

Key Products

Angradi, TR, editor. Environmental Monitoring and Assessment Great River Ecosystems Program (EMAP-GRE) Field Operations Manual. 2006. EPA/620/R-06/002. <http://www.epa.gov/emap/greatriver/fom.html>

Publish initial assessment of a section of Upper Missouri.

Provide technical assistance to state partners.

Publish assessment of the Mississippi River system.

www.epa.gov/emap/greatriver

For further information on this research contact:

David Bolgrien
bolgrien.dave@epa.gov
 218-529-5216