THE GREAT RIVERS NEWSLETTER

United States Environmental Protection Agency

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THE ENVIRONMENTAL MONITORING AND ASSESSMENT PROGRAM FOR GREAT RIVER ECOSYSTEMS (EMAP-GRE)

EMAP-GRE Technical Committee Meeting

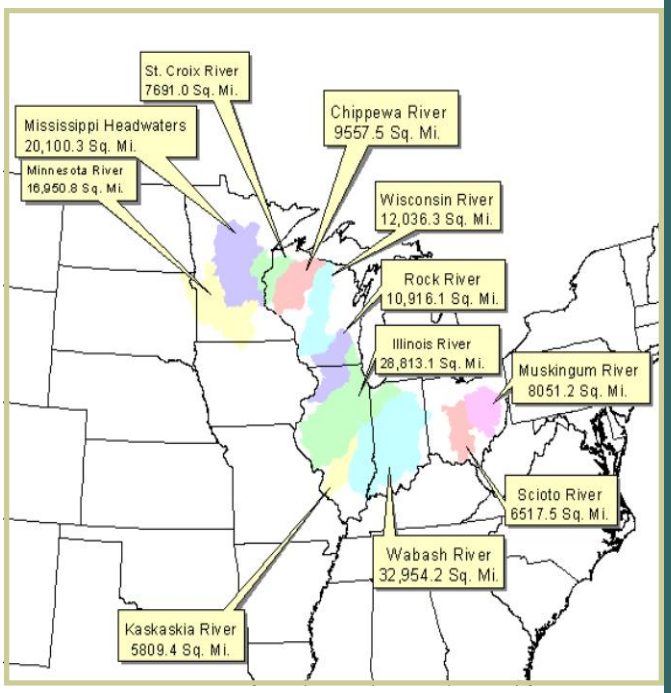
The first meeting of the EMAP-GRE Technical Committee was held in Cincinnati, OH on March 28-30. It proved to be a rare opportunity for Midwestern river scientists to gather, talk, and learn from each other's experiences. The Technical Committee is composed of experts on river biota, hydrology, and ecological indicators, and advises the EMAP-GRE Senior Advisory Committee. Many Technical Committee members are EPA regional scientists and science liaisons who are bridging the information gap between state resource managers and EMAP-GRE research. Over 30 environmental scientists gathered to review EMAP-GRE progress to date and to craft plans for the future of field sampling, data analyses, and report production. Discussion covered a range of topics from using DNA to identify fish species and populations to utilizing river hydrographs to better explain differences in littoral fish and macroinvertebrate habitat. Plans were laid to form "Indicator Working Groups" in areas such as water quality, fish, macroinvertebrates, and river zooplankton to guide development of ecological indicators and provide expertise to state, local, and tribal resource managers with the goal of better protecting and restoring the Great Rivers of central United States.

Ongoing Biological Assessment of Large Rivers

An EPA Regional Environmental Monitoring and Assessment Program (REMAP) study of tributaries to Great Rivers ("Large Rivers") is continuing through 2006. This project will develop, demonstrate, and promote the EMAP approach to monitoring and assessment in selected Large River tributaries to the Great Rivers. This project will enable researchers to estimate, with known statistical confidence, the current status, geographic extent and distribution of Large River resources within EPA Region V. It will also allow researchers to examine the among-and within-watershed variability of land use patterns that may influence the condition of Large Rivers and, ultimately, of the Great Rivers themselves.

The Large River tributaries to the Upper Mississippi and Ohio Rivers within Region V are an important ecological resource and constitute a significant water quality management challenge for the states and Region. The influence of large tributaries to the overall quality and condition of the Great Rivers is relatively unknown. The landscape component of EMAP-GRE includes complete coverage of the watersheds within the study area, and is intended to provide significant information on the vulnerability of aquatic systems to contributions from those watersheds. Predicting loads and impacts from these watersheds as they affect aquatic biota within the GRE study area can be improved by extending the scale of the study to include direct assessments of those watersheds.

We plan to use basic measures of fish assemblage abundance and condition such as species richness; proportions of sensitive, tolerant, rare or threatened species; invasive species; and organism condition indicators such as the frequency of occurrence of deformities, fin erosion, lesions, and tumors (DELT) to describe fish assemblage condition.

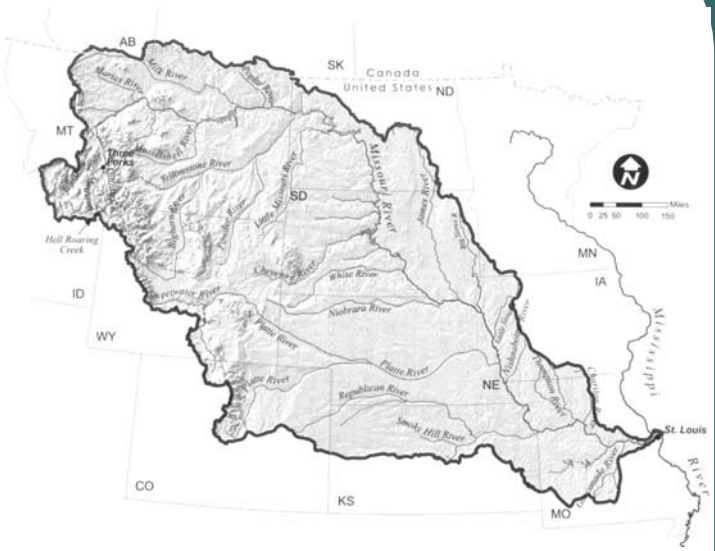


A map of the large river basins in the Region V REMAP project and some trophy fish collected in 2004.

The Great Rivers Newsletter is periodic publication of the EPA's Mid-Continent Ecology Division in Duluth, MN. The newsletter is designed to disseminate timely information about the EMAP-GRE project among EPA investigators; state, federal, and tribal collaborators; and other stakeholders. Contact Mark Pearson, editor (pearson.mark@epa.gov; 218-529-5205) to obtain copies of the newsletter. The newsletter and other EMAP information can be found on this website : **www.epa.gov/emap/greatriver**

Fish To Be Collected on Upper Missouri River in 2005

In 2005, USGS scientists from North Dakota and Texas will collect fish from the Garrison Reach of the Upper Missouri River for the EMAP-GRE program. The Garrison Reach stretches about 100 miles from Garrison Dam to near Bismarck, ND. While water, sediment, and invertebrates were collected throughout the Upper Missouri River in 2004, electrofishing had to be carefully considered because of the presence of the endangered pallid sturgeon. A review of electrofishing procedures and sites with the U.S Fish and Wildlife Service, and the North Dakota and Montana Game and Fish Departments concluded that EMAP sampling on the Garrison Reach posed little risk to sturgeon. However, no fishing would be allowed from Fort Peck Dam in Montana to Lake Sakakawea. Fish assemblage data for the Upper Missouri River are important for developing useful indicators of biological condition. Concentrations of contaminants in fish tissues and general fish health also will be measured. The EMAP program greatly appreciates the work of USGS scientists in North Dakota to coordinate this sampling. Fishing will begin with training in mid-August, and sampling the 14 sites will take about 3 weeks.



The Missouri River basin. The red shaded area is the Garrison Reach and will be sampled for fish in 2005. The other shaded areas were sampled in 2004.

EMAP-GRE Updates and Important Information

EMAP-GRE Data in Use

Recently collected (2004) EMAP-GRE data are already being presented at a variety of scientific meetings across the Great Rivers region.

A presentation titled "Zooplankton as Potential Indicators of Biotic Condition in Large Rivers" by K.A. Medley, J.E. Havel, and J.D. Jack will be made at a joint meeting of the North American Benthological Society and the American Geophysical Union in New Orleans, LA, May 23-27, 2005. Presentations will also be made at the Missouri River Natural Resources Conference in Pierre, SD, May 22-25, 2005. Terri Jicha (US EPA), Kathleen Rowland, Suzanne Femmer, Brenda Woodward (USGS), and Jason Crites (Missouri Dept. of Conservation) will present a program overview, field data from the upper and lower Missouri River, and fish community work, respectively.

Sample Crew Training Set for June 2005

The 2005 EMAP-GRE training will be held on June 14-16 at St Charles, MO. The classroom portion (half-day on the 14th) will be held at the Holiday Inn Riverport. The field portion will be held at the Blanchette Landing in St Charles on the afternoon of the 14th and 15th, and if needed, the 16th. This will be an opportunity to mix and mingle among crews to see how other folks have approached the logistics and solved sampling problems. A block of rooms have been reserved at the Holiday Inn Riverport (314)298 3400. Please make your reservations ASAP. Crews that are driving down should bring boats, if possible. We look forward to seeing you all as we prepare for another successful EMAP-GRE field season.

IM Update

Current status of field data entered into the EMAP-GRE Surface Water Information Management (SWIM) database for the 2004 field season stands at 89%, with 100% entry expected in May. The next steps include an extensive verification of entered data by the collecting crew leader, and a validation exercise by indicator leaders. Laboratory data entry is expected between May and September 2005 for the 2004 samples.

2002 EMAP Symposium Papers Available

A special issue of *Environmental Monitoring and Assessment Vol 103, No. 1-3, April, 2005* highlights the EPA EMAP Symposium held in Kanas City, MO in 2002. Several papers from members of the EMAP-GRE team were included in this publication

Riparian training session from 2004 field season.