

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

EMAP-GRE Indicators Workshop Is a Success

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The EMAP-GRE program held a Biological Indicators Workshop in Duluth, MN Oct. 24-26, 2006. The workshop was sponsored by the Council of State Governments and the USEPA. The workshop was attended by over 70 people representing various state agencies, federal agencies, and universities from the Upper and Lower Mississippi River Basin. The primary goal of the workshop was to develop an analytical framework for data that supports bioassessment of the Ohio, Upper Mississippi, and Missouri Rivers.

The first day consisted of several presentations covering selected topics related to assessments. Dave Bolgrien, EMAP-GRE Technical Lead, presented an outline of the EMAP-GRE assessment and an overview of the program. Karen Blocksom (USEPA-NERL) presented a well received talk on developing multimetric indices of biotic condition. Ted Angradi (co-PI, EMAP-GRE) discussed progress towards EMAP-GRE reference conditions.

The next series of talks covered indicator approaches that were new to the EMAP-GRE project. Predictive modeling (O/E) and relative risk analysis was presented by John Van Sickle (USEPA-NHEERL). Euan Reavie (U of MN-Duluth-NRRI) discussed how periphyton and phytoplankton indicators may be developed for Great Rivers. Paul Bukaveckas (VA Commonwealth Univ.) presented some preliminary data for zooplankton, chlorophyll a, and suspended particulates, and discussed how they can be developed for indicators of Great River ecosystems. Terri Jicha wrapped up the first day's presentations with a talk on information

management (IM).

The following day a discussion of stressor variables was led by Terri Jicha (water quality), Deb Taylor (habitat and hydrology), Mary Moffett (landscape data), and Jim Lazorchak (fish and sediment contaminants).

Breakout sessions were organized by biotic assemblages (fish, invertebrates, algae) and stressor variables (water quality, habitat/hydrology). Each group was asked to answer a set of questions pertaining to candidate metrics, autecology files, and the integration of stressor data. Throughout the 2 1/2 days report outs of each group's progress was discussed in one large group. On the last day each group was charged to create a roadmap showing how EMAP-GRE assessment documents and research products would be created.

To foster more discussion, participants were given an opportunity for a boat cruise on the St. Louis Harbor on Tuesday evening. Many folks braved what we here in Duluth affectionately call a nice cool evening on the top deck, but still enjoyed the sights of one of the world's largest freshwater ports. Several people also took advantage of curling lessons at the Duluth Entertainment and Convention Center in the evenings. From what I heard we should keep an eye out for Jeff Thomas at the next Winter Olympics.

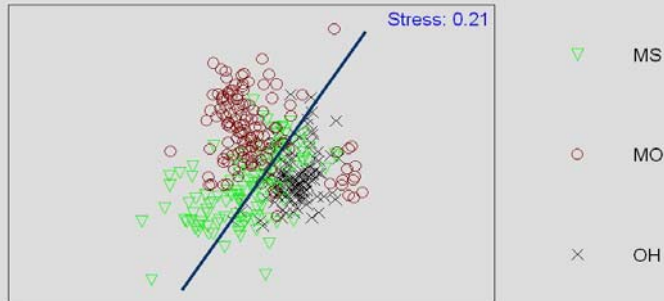
All presentations and attendee list can be found at the following website.

<http://www.epa.gov/emap/greatriver/grewkshp.html>

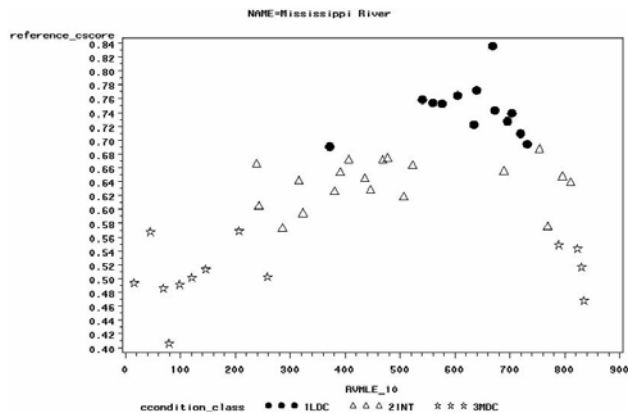
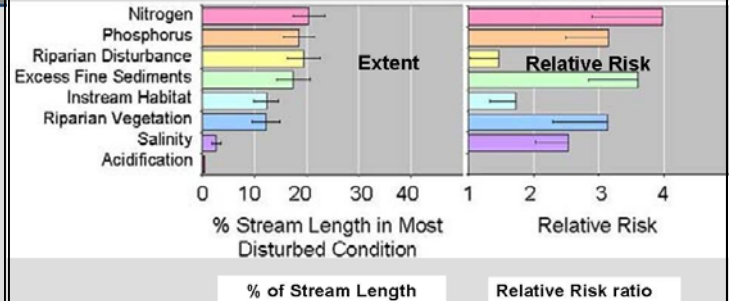


A selection of data slides from various presentations at the indicators workshop

Non-metric multidimensional scaling plot of fish assemblages of the Missouri, Mississippi, and Ohio Rivers for 2004 (Irons et al.)

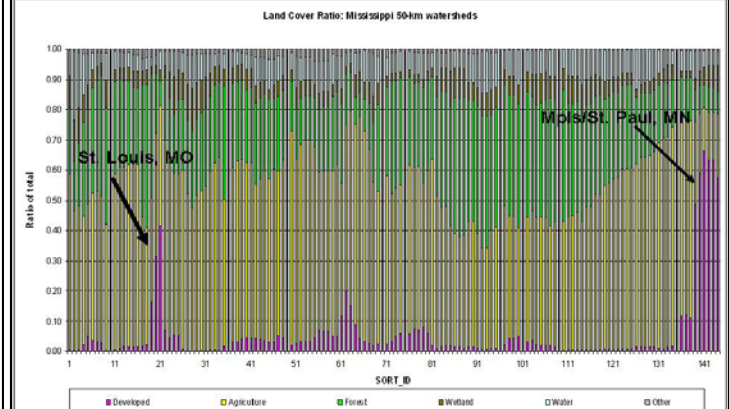


These graphs show the extent of poor condition for 8 stressors and the relative risk of the stressors for a macroinvertebrate IBI. Note that while riparian vegetation shows a low extent of disturbed condition, the relative risk to the macroinvertebrate community is high. Data is from the Western region of the Wadeable Streams Assessment. (Van Sickle et al.)



Example of an output of a multimetric model for screening sites to determine which are least disturbed. The model included 13 stressor or human disturbance metrics. Condition classes (symbol types) are based on percentiles. Based on 2004 data.

Major landcover classes 50 km upstream of EMAP-GRE sites in the Upper Mississippi River. Agriculture (yellow) and forests (green) are the dominant landcover types, but note their relative percentages change throughout the river basin.



Upcoming events

- **2007 EMAP Symposium, April 10-11, Washington DC**

The USEPA and the Council of State Governments are sponsoring the Eighth Environmental Monitoring and Assessment Program (EMAP) Symposium on April 10-11, 2007, at the Grand Hyatt Hotel in downtown Washington, DC. The Symposium will focus on achievements in monitoring to evaluate organizational effectiveness and to shape future research and policy. Platform and poster presentations will feature federal, state, tribal, and USEPA Regional perspectives on designing and implementing surveys on the condition of natural resources in order to meet assessment needs at multiple scales.

- **Survey of the Nation's Waters Planning Meeting, January 10-12, 2007, San Antonio, TX**

USEPA is planning a meeting to engage states, tribes, and other interested parties in designing a national survey to assess the condition of non-wadable rivers and streams. For more information regarding this meeting contact Treda Smith at USEPA, 202-566-0916 or smith.treda@epa.gov; or Krista Rinehart, CSG, at 859-244-8249 or krinehart@csg.org

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