Upper Mississippi Monitoring

Mary Skopec
Watershed Monitoring and Assessment
Iowa Department of Natural Resources

Coastal Waters; Iowa?

"We are pretty sure that the last ocean transgressed partway into western Iowa very early in the Tertiary. This would have been what we call the Cannonball Sea (deposited the rocks of the Cannonball Formation of the Dakotas), about 60 million years ago. Rocks deposited by this transgression have been eroded from Iowa. The last sea advance that deposited rocks that are still here in Iowa was the Niobrara Sea that moved into western Iowa late in the Cretaceous, about 84 million years ago. Since then, only seas of ice." *Raymond Anderson, Iowa Geological Survey*

Integrating State Monitoring into Coastal Network

- Background – Iowa Monitoring
- Past Efforts: Gulf of Mexico Hypoxia
- How Might Current (or Future) State Monitoring Fit into the Network
- Challenges with Integrating States
  - Priorities? State vs. National

Ambient Monitoring in Iowa

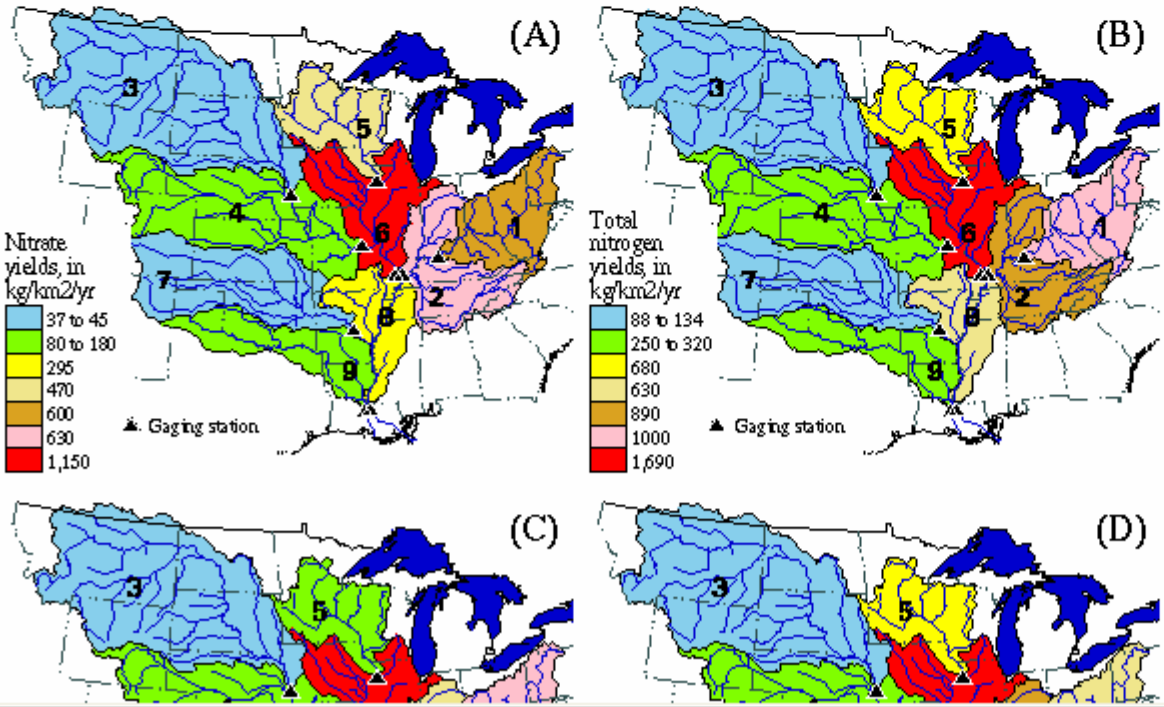
- Prior to 1999 Iowa virtually had no ambient monitoring (16 stream sites monitored monthly)
- New $$ in 1999 for monitoring
- Stakeholders and Technical Committees determine priorities
  - "Big" Rivers (Mississippi/Missouri) considered a lesser priority than interior streams
  - Begin monthly stream sampling at 62 sites

File Edit View Favorites Tools Help
Back Search Address http://co.water.usgs.gov/hypoxia/html/graphics8.html Go
Google xia map of nitrogen inputs Search 23 blocked Check AutoLink AutoFill Options gulf of mexico hyp

USGS

Hypoxia Graphics

Graphics used in presentation to the Hypoxia Task Force in Minneapolis, MN on September 24, 1998



Internet

USGS
science for a changing world

A Science Strategy to Support Management Decisions Related to Hypoxia in the Northern Gulf of Mexico and Excess Nutrients in the Mississippi River Basin

Circular 1270

U.S. Department of the Interior
U.S. Geological Survey

http://pubs.usgs.gov/circ/2004/1270/

The Mississippi River/Gulf of Mexico Nutrient Task Force formed 1997

Goals:
Determine Causes and Effects Of Hypoxia

Coordinate Activities to Reduce the Size And Severity of the Hypoxic Zone

Monitoring, Modeling, Research
Workshop Held in St. Louis, MO
October 16-18, 2002

Changes in the National Stream Quality Accounting Network

1974-1994

15.1 A. The National Stream Quality Accounting Network program was created in 1974 to develop baseline water chemistry data for the nation. The network started with over 500 stations but by 1994 the program had been reduced to 274 sampling stations throughout the United States. (Not shown are the thirteen stations in Alaska, eight in Hawaii, six in Puerto Rico, and one in Guam.)

2002

15.1 B. Today, the program consists of only thirty-two stations focused on the nation's five major river basins, leaving almost the entire coastal region unmonitored.

Source: U.S. Geological Survey, U.S. Department of the Interior. <http://water.usgs.gov/nasqan/progdocs/index.html> (Accessed January, 2004).

MMR Basin Monitoring Priorities

- Adopt a four-level watershed monitoring system based on varying spatial scales; led by different levels of government
- Supplement existing monitoring efforts including monitoring on smaller rivers and streams to enable understanding of nutrient transport mechanisms
- Coordinate monitoring and reporting through leadership at the federal level.
- USGS and EPA should take leading roles in providing assistance to states and local groups to monitor the water quality

MMR Coordination Needs

- Maintain coordination at the highest level
- Include all entities directly involved or indirectly involved with the Basin or Gulf
- Coordination includes:
  - Monitoring activities
  - Modeling activities
  - Social and Economic Considerations

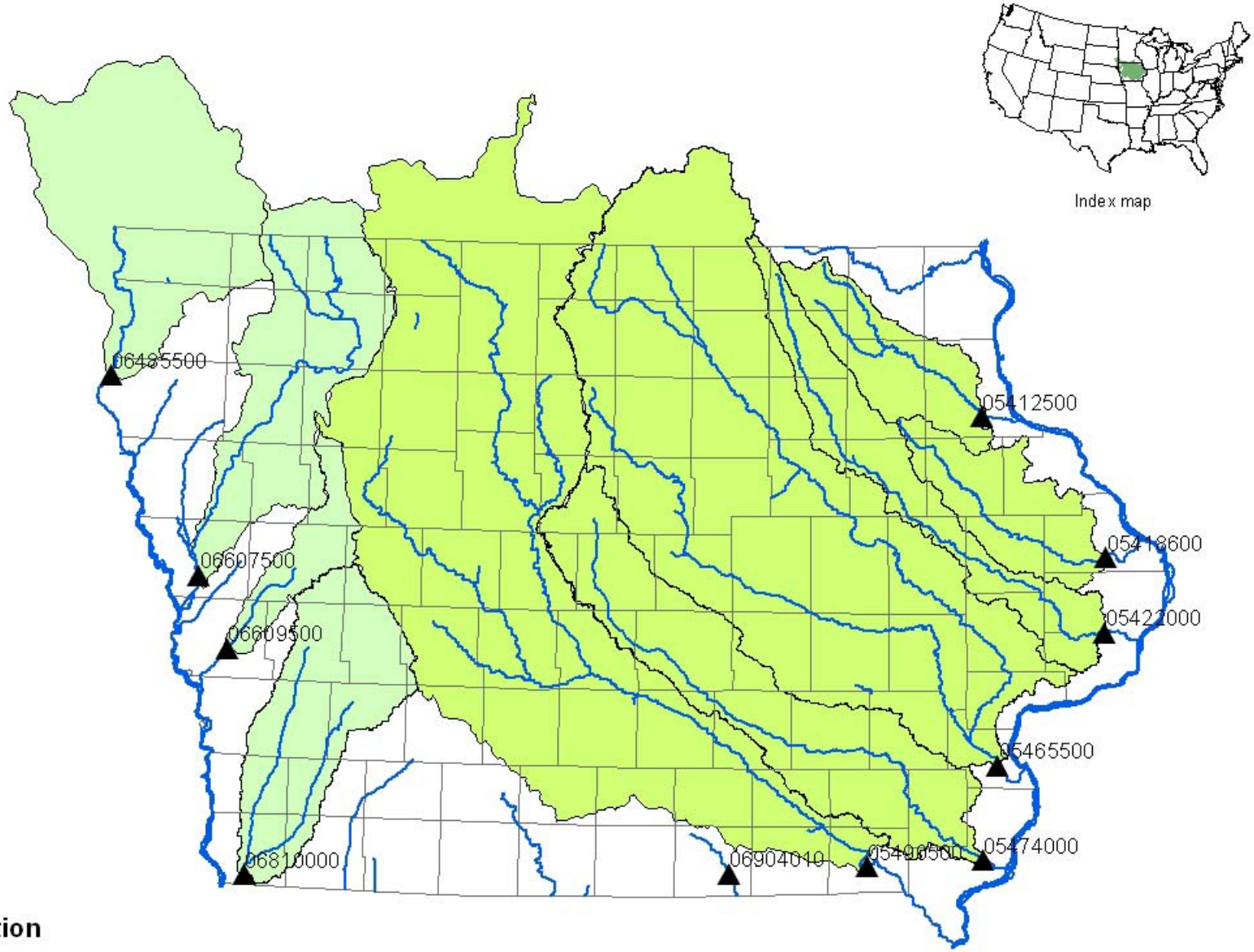
MMR Resource Needs

- New resources to plan, design, and implement monitoring, modeling and restoration
- Establish minimal monitoring, modeling and research activities
- Identify coordination and development of practical synergies among ongoing activities as a priority for new resources so as to avoid duplication of effort and maximize utility of existing programs
- Develop a detailed implementation plan

Short Term Action #2

- "By Summer 2001, states and tribes in the Basin, in consultation with the Task Force will establish sub-basin committees to coordinate implementation of the Action Plan by major sub-basins including coordination among smaller watersheds, tribes, and states in each of the sub-basins."

The Action Plan, p.13



Explanation

- ▲ Large river sites
- Mississippi River basin
- Missouri River basin

Analytes include: Field parameters, Nutrients, Algal Pigments, Major Ions, Pesticides;
Co-located with USGS Gage Stations
Sampled Monthly Plus Events

Back Search Address http://www.umesc.usgs.gov/ltrmp.html Go
Google source Monitoring Program Search 23 blocked Check Look for Map AutoFill Options Long Term Resource

Long Term Resource Monitoring Program

Data and sampling information
LTRMP Publications
LTRMP Reports
Related documents
Field stations
Other projects and data sets
A Team corner

The Long Term Resource Monitoring Program was authorized under the Water Resources Development Act of 1986 (Public Law 99-662) as an element of the U.S. Army Corps of Engineers' Environmental Management Program. Original authorization provided for a 10-year Program starting in 1987; Section 405 of the Water Resources Development Act of 1990 (Public Law 101-640) extended the Program an additional 5 years; Section 509 of the Water Resources Act of 1999 (Public Law 106-53) extended the Program indefinitely.

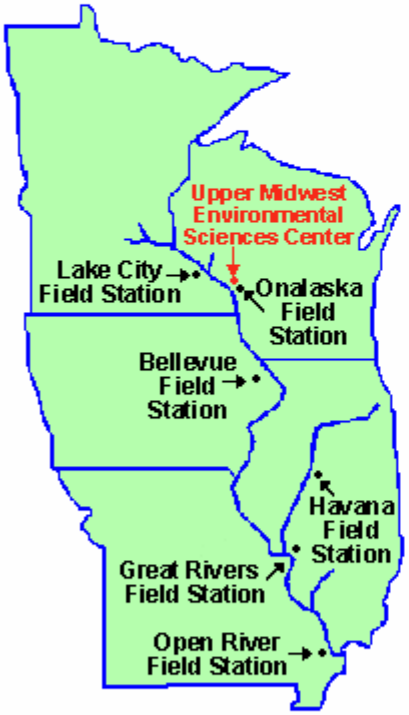
The Long Term Resource Monitoring Program is being implemented by the U.S. Geological Survey (USGS) in cooperation with the five Upper Mississippi River System states (Illinois, Iowa, Minnesota, Missouri, and Wisconsin), with guidance and overall Program responsibility provided by the U.S. Army Corps of Engineers. A directive outlining the mode of operation and the respective roles of the agencies is embodied in a 1988 Memorandum of Agreement.

In the Water Resources Development Act of 1986, Congress recognized the Upper Mississippi River System as both a nationally significant ecosystem and a nationally significant commercial navigation system. Accordingly, the mission of the Long Term Resource Monitoring Program is to provide decision makers with the information needed to maintain the Upper Mississippi River System as a viable multiple-use large river ecosystem. The long-term goals of the Program are to understand the system, determine resource trends and impacts, develop management alternatives, manage information, and develop useful products.

Internet
start Microsoft Outlook ... http://128.255.13... http://128.255.13... Upper Midwest Env... Microsoft PowerPoi... 5:11

File Edit View Favorites Tools Help
Back Search Address http://www.umesc.usgs.gov/field_stations/fieldstations.html Go
Google source Monitoring Program Search 23 blocked Check AutoLink AutoFill Options Long Term Resource

Field Stations



Six cooperative state owned and operated field stations (Lake City, Minnesota; Onalaska, Wiscons Bellevue, Iowa; Great Rivers and Havana, Illinois; and Open River, Missouri) have been established for the Long Term Resource Monitoring Program and other field data collection, analysis, quality assurance, and applied research. Three of the field stations are located within the upper impound geomorphic reach of the Upper Mississippi River System, one is located within the lower impounde reach, one is in the lower Illinois River, and one is in the open river geomorphic reach.

Each field station has similar complements of staff and equipment. Between five and seven permanent staff members including a Team Leader, component specialists (water quality, fisheries and vegetation) and several technicians (fisheries and water quality) comprise the team. Tempora staff are added as needed.

Equipment at field stations consists of several boats designed for various types of sampling during seasons (i.e., an electrofishing boat, airboat, hovercraft, canoes, and various flat-bottomed boat and motors), various types of nets and seines, and electronic equipment including water quality meters and global positioning systems (GPS). In addition, office equipment (computers, printers, copy and fax machines, etc.) sufficient to operate a typical field office is available.

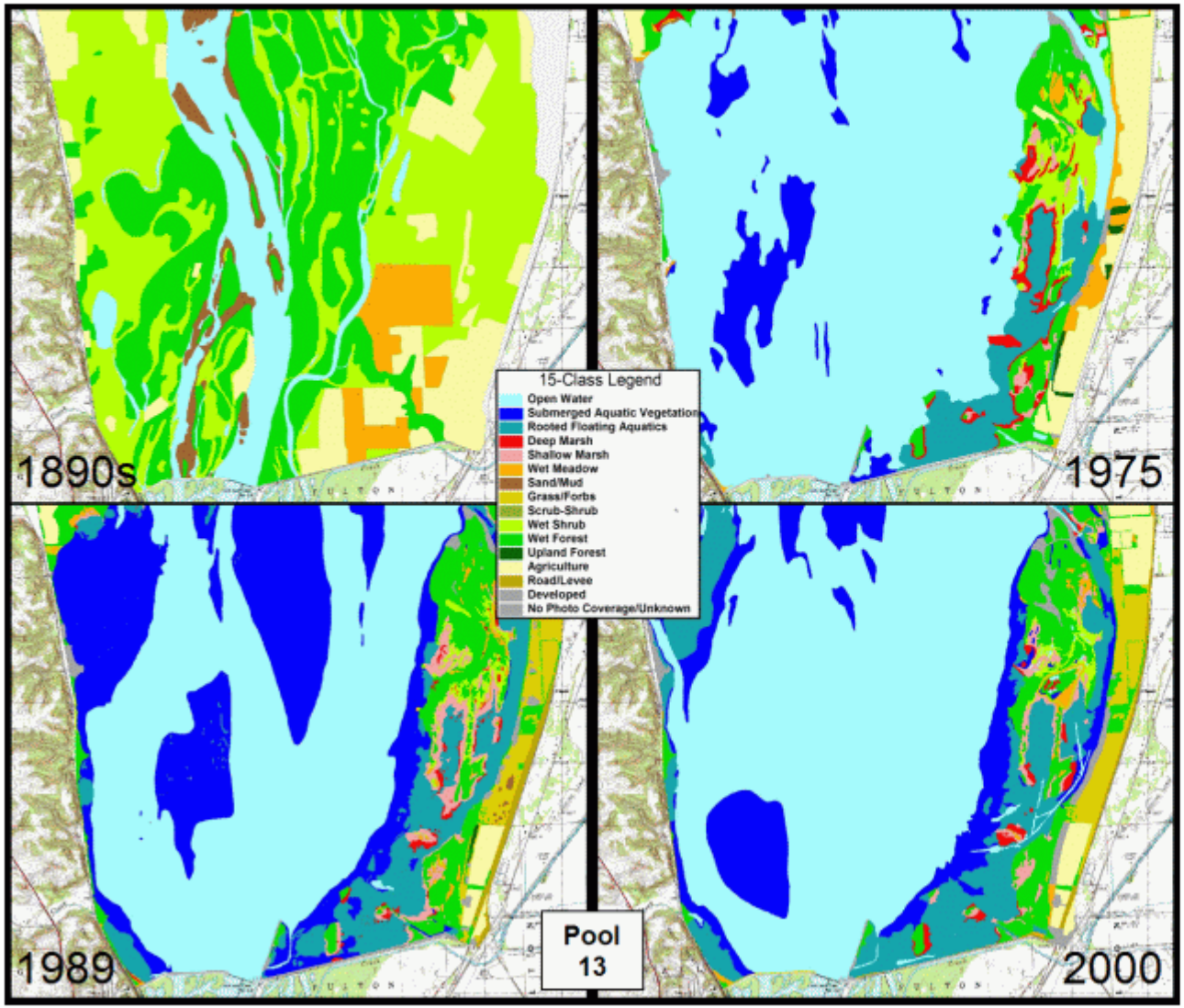
FIRSTGOV.gov
Internet

Challenges

- Coordination and Priority setting in a moving target-type environment
- Can't forget the intrinsic value of the tributary streams
- Data to fit state/local needs as well as national needs?

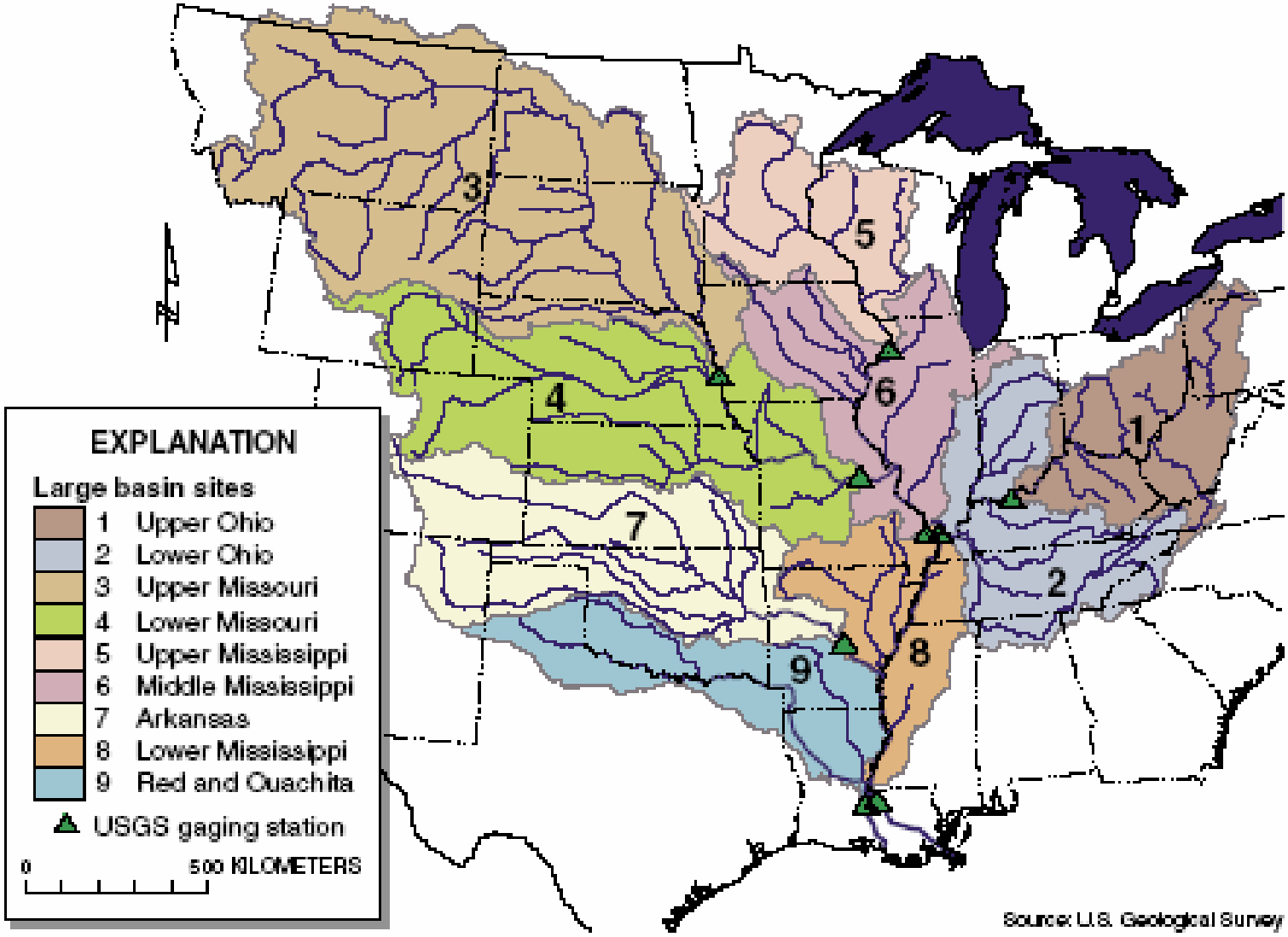
File Edit View Favorites Tools Help
Back Search Address http://www.umesc.usgs.gov/reports_publications/ltrmp/2004/summary_findings/figure09.html Go
Google source Monitoring Program Search 23 blocked Check Look for Map AutoFill Options Long Term Resource

Figure 9. Land cover/land use for the 1890s, 1975, 1989, and 2000 for the lower impounded section, Pool 13, Upper Mississippi River Syste



Internet

Questions?

Mary.Skopec@dnr.state.ia.us

Nine Large Sub-Basins Monitored Currently by USGS