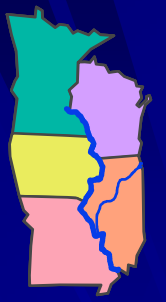
12th Biennial
Governor's Conference
on the Management of the
Illinois River System



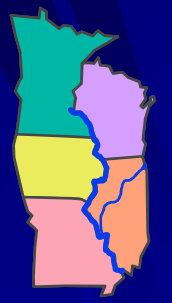
Large River Ecosystem Restoration and Monitoring: How the Past Paves a Way for the Future on the Upper Mississippi River System

October 21, 2009
Peoria, IL

By
Marvin E. Hubbell
Marvin.E.Hubbell@USACE.Army.Mil
http://www.mvr.usace.army.mil/EMP

One Team: Relevant, Ready, Responsive and Reliable

Looking Back – Looking Forward
UMRS



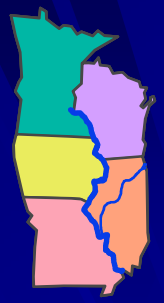
1870 - Managed System (4-Foot Channel)

1940 - UMR-IWW 9-Foot Channel Project

1950 to Present - Environmental Degradation

1986 – EMP Authorized and Vision for Multiuse System

2007 – NESP Authorized

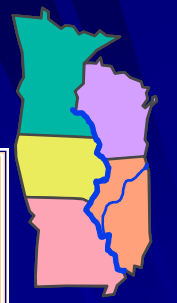


National Significance of Upper Mississippi River System

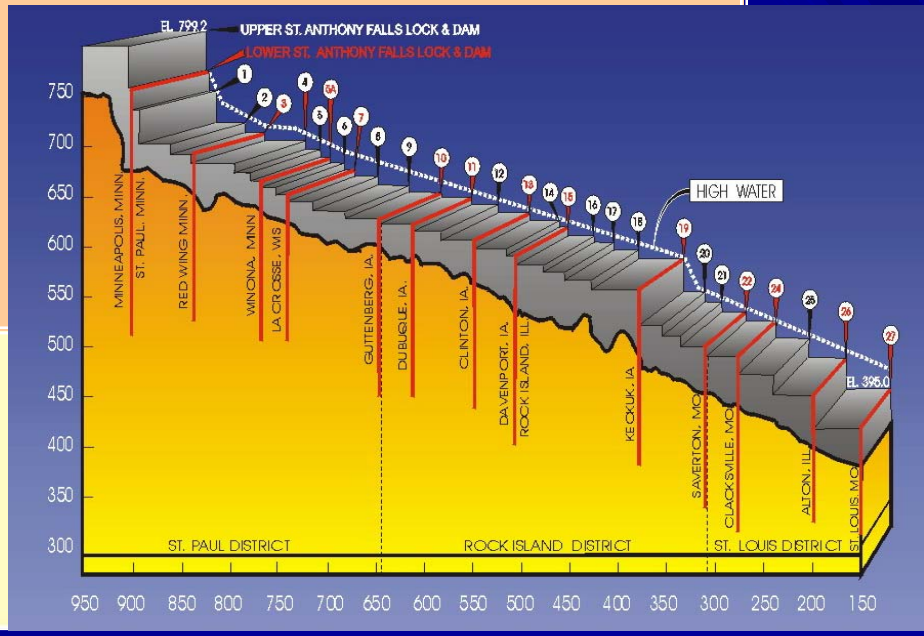
Only River in the United States to be formally recognized by Congress "… as a nationally significant ecosystem and a nationally significant commercial navigation system. … shall be administered and regulated in recognition of its several purposes."

Citation: Water Resources Development Act of 1986, Section 1103(a)(2).

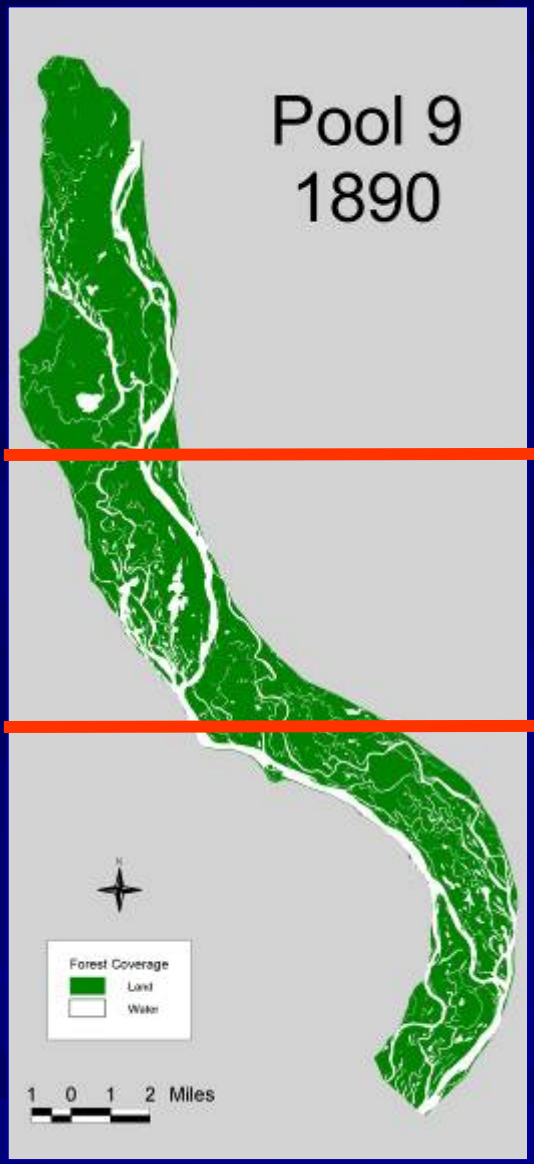
UMR-IWW NAVIGATION SYSTEM

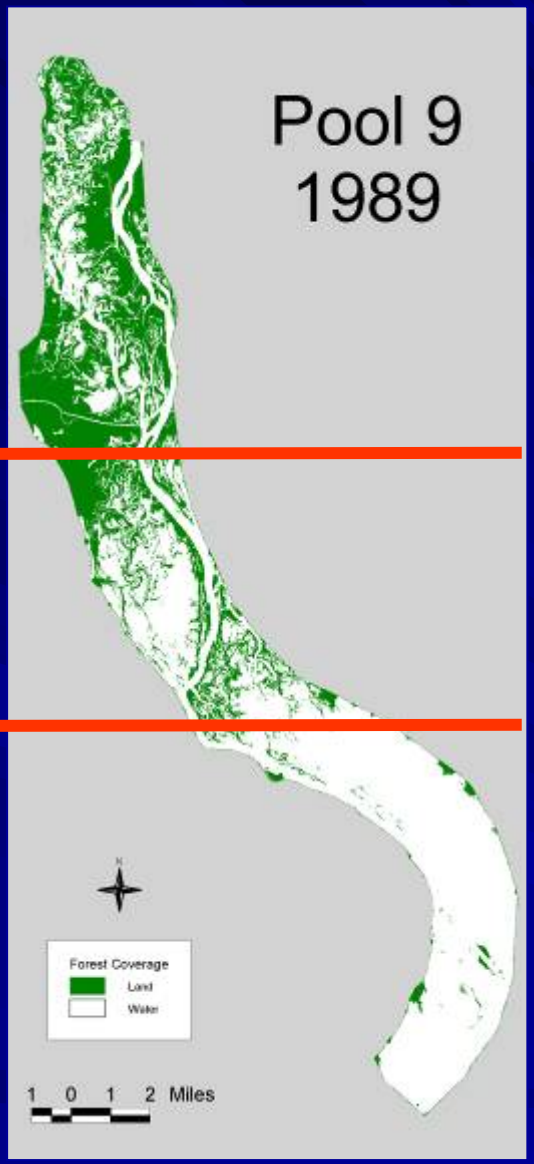


- **Significant Ecosystem (2.7 million acres)**
- **30 Million People**
- **1,200 Miles of River**
- **37 Lock Sites**
  Constructed 1930-45



Lower Pool 16 ca. 1943

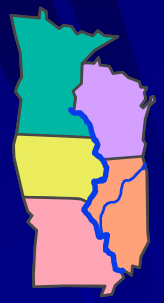

Pool 9
1890
Forest Coverage
Land
Water
1 0 1 2 Miles


Pool 9
1989
Forest Coverage
Land
Water
1 0 1 2 Miles

Degradation of Habitat

- In the Impound Reaches - greatest impact in the Lower 30% - 50% of Pools
  - Loss of Topographic Diversity
    - Sedimentation of deep areas
    - Erosion of Islands
  - Higher water levels at historical low flow periods negatively impacted moist soil plants
  - Higher water table negatively impacted floodplain forests

Degradation of Habitat

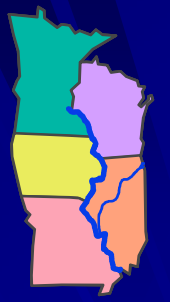


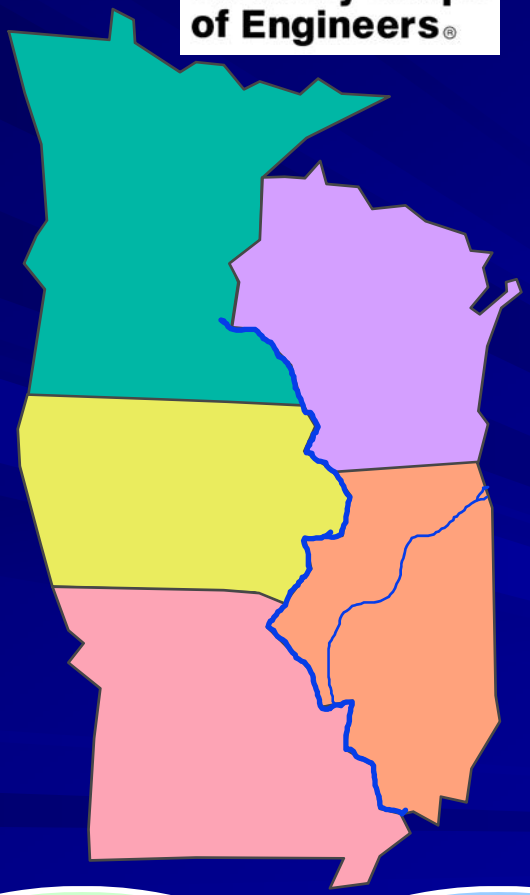
- In the Open River reach this resulted in a narrowing and deepening of the main channel and reduction of habitat complexity.

EMP Timeline

- Upper Mississippi River Basin Commission (1972 – 1981)
- GREAT I, II, (1980) and III Studies (1982)
- Upper Mississippi River Master Plan – Recommendation Lock and Dam 26 & EMP (1982)
- Upper Mississippi River Basin Association (1981 – Present)
- WRDA 1986 – EMP 1st. Large Scale Ecosystem Restoration and Monitoring Program In Corps, Nation, and World.

COLLABORATION





PUBLIC

NGO's

One Team: Relevant, Ready, Responsive and Reliable

Major Components of EMP

Sunfish Lake, Pool 11
Aug. 1994

HREP
50 Projects
83,000 ac.

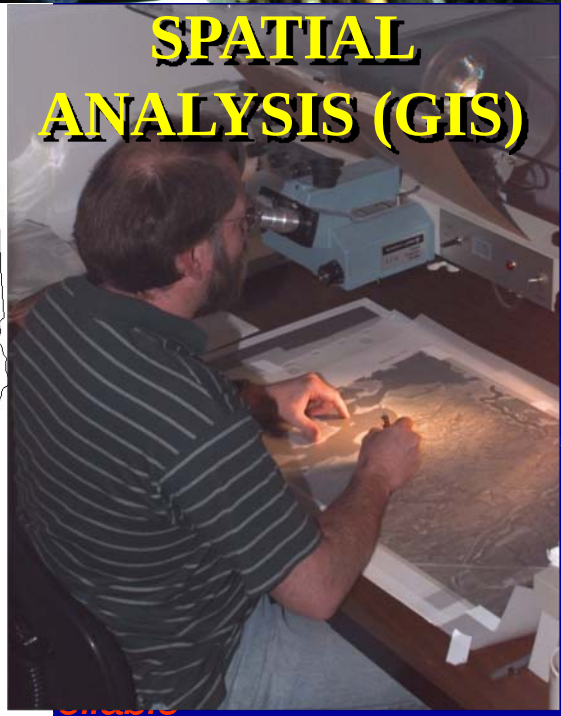
Sunfish Lake, Pool 11
Sept. 2006


WATER QUALITY


VEGETATION


FISHERIES


Minnesota
Wisconsin
Lake City
Field Station
Onalaska
Field Station
Iowa
Bellevue
Field Station
Mississippi River
Illinois River
Havana
Field Station
Missouri
Missouri
River
Great Rivers
Field Station
Illinois
Open River
Field Station

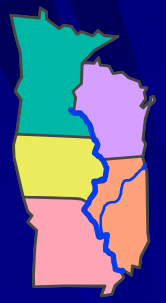

SPATIAL
ANALYSIS (GIS)

Key Regional Features

- Partnership – Not just a concept but a way of doing business.
- Development of a regional Corps business model
- Linkage between understanding the ecology of the UMRS with restoration efforts of the UMRS.
- Adapt and develop restoration and monitoring techniques for use on a large river system.
- $33.4 M Authorization

While EMP was growing up NESP was being conceived and then born!

NESP Timeline



- 1987 – 1992 IL and Miss. River Recon. Study
- 1993 Navigation Feasibility Study
- 2000 – 2004 Feasibility Study added Ecosystem Restoration (to compliment EMP)
- 2007 WRDA Dual Purpose Authorization of First Increment - $1.8 B Authorization

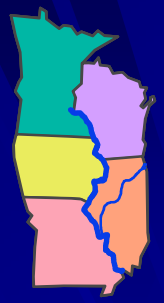
Key Lessons

- Partnership – Hallmark of EMP
  - Basis of technical, policy, and political support and development of program.
  - One of 3 – 6 national priority projects since 2001
- But…
  - You can always improve
    - More formal engagement of NGO's and other stakeholders
    - More formal involvement of higher level management

Key Lessons (cont.)

- Effective Integration of ecosystem restoration and scientific monitoring and research is critical to success. Another Hallmark of EMP.
  - Monitoring Status and Trends of UMRS
  - Research
  - Systemic Data Acquisition
  - Monitoring Project Performance
  - Passive Adaptive Management Strategy
  - But …

Key Lessons (cont.)



- Under NESP we will develop –
  - Strategy for Active Adaptive Management
  - Expand project monitoring efforts

Key Lessons (cont.)

- Importance of learning and transfer of knowledge. Last two decades:
  - Planning Manual
  - HREP Design Manual
  - More than 300 reports and scientific publications
  - Integrated technical and policy teams
  - Quarterly Meetings
  - Data Bases and web sites
  - Public Out Reach
  - But …

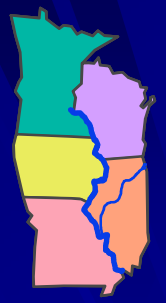
Key Lessons (cont.)

- The future demands increasing levels of effort and investment in all of these areas. Especially:
  - DSS
  - Regional Public Outreach
  - “Program Neutral” Communications
  - Expansion of electronic communication and direct contact.
  - Increased use of models

Key Lessons (cont.)

- Transparency, Accountability and Sophistication must increase over time. Anticipate it, plan for it, and budget for it.
  - Evolution of project identification and selection:
    - Initial projects – Project based perspective
    - 2nd Generation – Greater transparency, local, reach, and systemic perspective.
    - 3rd Generation – Linkage to "codified" goals and objectives with the development of indicators to measure progress.

Conclusion



- Adaptive Management
  - EMP – Passive
  - NESP - Active
- Ecosystem Restoration relationship to the inland navigation system
  - EMP – Linked
  - NESP – Tied
- Funding
  - EMP - $33.2 M Annual - $500 M over 15 yrs.
  - NESP - $1.8 B first increment
- Congressional Intent for EMP & NESP
  - Linked, Tied, and Integrated


Marvin.E.Hubbell@USACE.Army.Mil
http://www.mvr.usace.army.mil/EMP
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