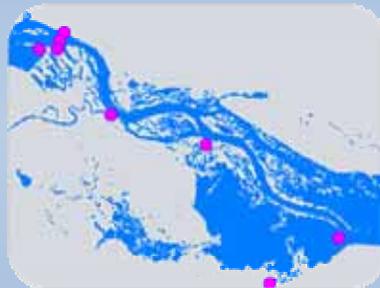


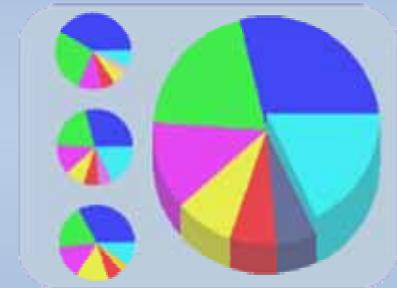


# Data Management, Tools and Delivery; Lessons Learned after 20 years

## Long Term Resource Monitoring Program



23.200	22.800	23.100	23.500
23.750	23.200	23.400	24.600
27.200	25.600	26.700	27.600
23.800	22.500	23.200	24.100
24.400	23.600	24.000	25.300
25.800	24.500	25.300	26.100
27.700	26.400	26.500	28.600
24.600	23.300	23.900	24.900
26.800	25.500	26.400	27.400
26.900	26.300	26.700	27.300
n.s.	n.s.	n.s.	n.s.
25.600	25.100	25.400	26.100
26.400	24.500	26.100	27.200



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

Linda Leake  
Deputy Center Director  
Upper Midwest Environmental Sciences Center

# Key Lessons Learned .....

- Data Capture
- Data and Information Delivery

1987

1992

2000

2007



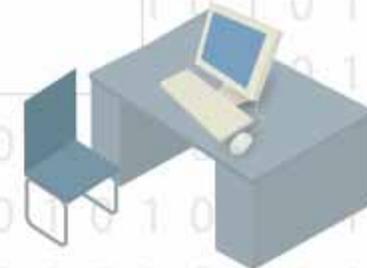
FIELD STATIONS  
DATA ENTRY



CONTRACTED  
DATA ENTRY



DIRECT  
DATA ENTRY



UMESC Database Management

~40%

DATA COLLECTION - WARNING FLAGS

2.5%

<1%



# Information Delivery

## Presentations



## Fact Sheets



## Open-file Reports



## Web



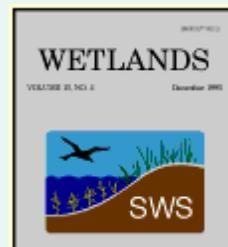
## Outreach



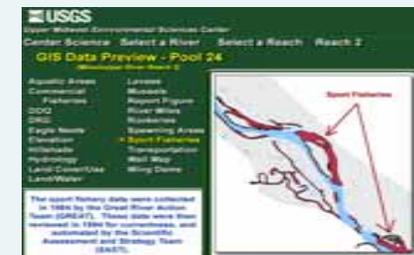
## LTRMP Reports



## Manuscripts



## GIS Data Library



DATA → INFORMATION → KNOWLEDGE



 USGS