

**Data Management, Tools, and Delivery; Lessons Learned  
after 20 Years - Long Term Resource  
Monitoring Program**

*Abstract*

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The effects of river regulation and modifications to the Upper Mississippi River System's watersheds, floodplains, and tributaries present constant challenges to the ecological integrity of the system. To meet these challenges, better information and knowledge must be pursued and increasingly effective partnerships must be nurtured and maintained. To this end, the Environmental Management Program (EMP) was established and authorized in the 1986 Water Resources Development Act. The Long Term Resources Monitoring Program (LTRMP) is one of the two major components of the EMP. We now have 20 years under our belt and some of the key lessons learned focus on data management, tools, and delivery. The collection of field data has evolved from recording data on paper to the electronic capture of the data through the use of standalone applications on ruggedized field laptops. The electronic capture improved the efficiency, accuracy, and economy of data capturing. This included more than a 40% reduction of staff time manually reviewing the data for compliance with the quality assurance/quality control process. Data and information assets can easily languish, disappear, or fall into disarray—making them less valuable, less accessible, and less likely to be utilized. Thus, data stewardship and long-term support for the assets are a must for LTRMP. Data management activities focus on the care and feeding of the LTRMP data. For the LTRMP information and data to be of value, it must be accessible to resource managers and decision-makers in the Upper Mississippi River System, Federal agencies, the States, and the private sector. Sharing this data and information in a timely and useful way is critical to the overall success of the program.