



WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: 2002MO1B

Title: Web-Based Tool for Implementing Adaptive Management in the Missouri River System

Project Type: Research

Focus Categories: Management and Planning, Models, Water Quality

Keywords: Adaptive Management, Missouri River System, Bayes Rule, Web-Based

Start Date: 03/01/2002

End Date: 02/28/2003

Federal Funds: \$21,999

Non-Federal Matching Funds: \$25,574

Congressional District: Missouri 9th

Principal Investigator:

Tony Prato

University of Missouri-Columbia

Abstract

Management of the Missouri River System is challenging because of its complexity and competing uses of the river. The capacity to manage the river can be significantly enhanced by developing analytical methods and tools that allow decision-makers and stakeholders to evaluate the benefits of alternative river management actions. A new strategy identified by the Corps of Engineers in the Revised Draft Environmental Impact Statement for the Master Manual and the subject of a National Academy of Sciences study is adaptive management (AM). AM is the dominant management philosophy for dealing with biophysical complexity and uncertainty in natural systems. Its basic premise is that management actions should be treated as experiments for acquiring information about ecological and socioeconomic responses. Results from monitoring those responses provide a basis for determining whether or not a particular management action results in a desired state for a natural system. The goal of the proposed project is to develop an analytical framework for implementing AM in the Missouri River System. Specific objectives are to: a) develop an AM framework that can be used to select and revise management actions for the Missouri River System and b) incorporate the AM framework in a web-based decision support tool. The framework developed in the first objective uses Bayes rule to determine the most likely state of the Missouri River System. The web-based decision support tool developed in the second objective will enhance the accessibility of the AM framework to decision-makers and stakeholders. The target audience for the proposed research includes: the Army Corps of Engineers, Fish and Wildlife Service, Missouri River Basin Association, Missouri River Natural Resources Committee, EPA, Missouri Department of Natural Resources and others.