USDA-CSREES 2006 National Water Quality Conference

Planning river restoration at the watershed scale with help of dynamic maping.

Assessment and restoration of running waters requires watershed context that calls for recognition and quantification of causative relationships between basin wide processes and response of biological agents. For the purpose of management we need a GIS framework that integrates the predictive assessment and planning tools available at both biological-response and watershed scales with spatial data organization and presentation.

Mesohabitat Simulation Model (MesoHABSIM) is a habitat modeling approach that intents to predict biological response to management actions across a number of scales. It can be integrated with wide array of assessment techniques to address the requirements of watershed-based management of running waters. This method has been adopted by some Northeastern states for development of state wide instream flow standards for streams and wetlands. The complex nature and spatial arrangement of data collected throughout a watershed-wide project presents many obstacles when analyzing and displaying the different types of information involved. Visualizing the volumes of data can be overwhelming, and even experienced project managers may have trouble conceptualizing the intricate facets. The Northeast Instream Habitat Program at the University of Massachusetts has developed a number of sophisticated tools and techniques for data collection and management across a number of scales including application of a Dynamic Digital Map (DDM) template to an existing watershed project on the Souhegan River, NH. A DDM is a stand-alone "presentation manager" program that can display maps, images, movies, data and supporting text such as map explanations and field trip guides (Condit, 1999)

This paper will present techniques used by MesoHABSIM and utility of DDM as a planning and extension tool.

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Author: Piotr Parasiewicz
Coauthor(s): Joe Rogers