

# HYDROLOGY AND SEDIMENT TRANSPORT CHARACTERIZATION AND MANAGEMENT CONSIDERATIONS<sup>1</sup>

Timothy D. Straub<sup>2</sup>

**Abstract:** The amount of water and sediment delivered in streams is affected by many natural and human factors that are constantly changing. Streamflow, sediment load, and geomorphic data are used to establish baseline information for water-resource managers to evaluate historical and current conditions. The planning of management alternatives due to a disturbance in the natural system continues to be a complex problem for water-resource managers. Utilizing the baseline information, modeling of streamflow and sediment transport for existing, disturbed, and alternative conditions is being used to help optimize efforts in implementing quality and cost-effective stream restoration projects. The results help managers visualize the problems and make thoughtful and effective management decisions to help ensure conveyance of water and sediment transport without excessive sediment erosion or deposition. The presentation will use selected ongoing and completed projects to characterize hydrology and sediment transport, and modeling tools to consider when making management decisions.

**Additional Key Words:** Stream design, sediment, bed load

---

<sup>1</sup> Paper was presented at the 2012 National Meeting of the American Society of Mining and Reclamation, Tupelo, MS *Sustainable Reclamation* June 8 - 15, 2012. R.I. Barnhisel (Ed.) Published by ASMR, 3134 Montavesta Rd., Lexington, KY 40502.

<sup>2</sup> Timothy D. Straub Sediment Specialist, US Geological Survey – Illinois Water Science Center, Urbana, IL 61801