

A Spatial Decision Support System for Rangeland Watershed Management

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ABSTRACT

The impact of livestock grazing on water quality, especially erosion and sedimentation, is an important concern in the southwestern United States. In response to Federal and State regulations, Best Management Practices (BMPs) for rangeland management are being developed and implemented in many western states, although the efficacy and economic impact of many practices have not been examined. To assess the potential effectiveness of BMPs a Spatial Decision Support System (SDSS) has been designed to integrate water quality, livestock management, and economic concerns. The SDSS has been developed through the integration of hydrologic, erosion, livestock management, and economic simulation models linked with a geographic information system and database management system. The SDSS can help managers select the type and location of BMPs based on site-specific data and is deployed via the Internet providing access through a web browser. The SDSS provides land managers with a means to identify critical areas causing water quality degradation, and design, and implement watershed management measures to improve water quality. This poster will describe the SDSS and provide case study examples of its application.