



USDA-CSREES 2007 National Water Quality Conference

An Alabama Best Management Practice Database for Evaluating Water Quality Impacts

Abstract Agriculture and forestry are two important industries in the state of Alabama, and each is historically known for causing nonpoint source (NPS) pollution problems. Currently, the U.S. Environmental Protection Agency (EPA) considers NPS pollution to be its biggest water quality problem. Best management practices (BMPs) are often used to control NPS pollution in agricultural, forested, and urban watersheds. A BMP is any practice or method that is used to reduce or prevent NPS pollution. Effectiveness of BMPs can be determined by collecting monitoring data under various hydrologic, geomorphic, and weather conditions. However, collecting monitoring data is expensive and time consuming. Therefore, to assess watershed-level reduction in NPS pollutant loads derived from BMP implementation and to devise future NPS abatement plans, watershed-scale NPS pollution models are used. The overarching goal of this project is to develop a comprehensive database of commonly used agricultural and forestry BMPs and to demonstrate how various NPS pollution abatement measures can be evaluated using the BMP database and the SWAT (Soil and Water Assessment Tool) model. The specific objectives of this project are to: (1) develop a BMP database of commonly used BMPs in agriculture and forestry for the State of Alabama, (2) create an ArcView 3.X GIS extension to load the database into the SWAT model, and (3) demonstrate the usefulness of the database by modeling BMPs in an example watershed. This presentation will focus on all three of these objectives. The database will provide environmental professionals with detailed information on how agricultural and forested lands are usually managed in Alabama. Using the BMP database with the SWAT model, environmental professionals will be able to evaluate the site-specific effectiveness of BMPs and conduct more accurate assessments of NPS pollution, TMDLs, and implementation plans.

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