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Agricultural BMP's, HSPF, and FarmLatis

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Abstract Text:

Water quality is progressively becoming more important in the planning process. A field verification of the FarmLatis conservation planning tool represents research into technology that is for use in the conservation planning process. A program is being developed by researchers from Mississippi State University that are from the Forest and Wildlife Research Center, the Departments of Landscape Architecture, Civil Engineering, and Agricultural and Biological Engineering that integrates hydrologic modeling (HSPF) and Best Management Practice (BMP) implementation, called Latis (Wilkerson et al. 2006). Latis and FarmLatis are intended to help developers and conservation planners implement Low Impact Development (LIDs) and construction planning strategies into their site designs. The application of hydrological modeling is a natural extension of these planning processes. The modeling process can assist in determining the different design alternatives for a specific site and assess their effectiveness in maintaining and improving water quality. Farm Latis is an extension of the Latis modeling tool which predicts the time-varying runoff and water quality of stormwater. Three sites located at Mississippi State University are being modeled and monitored. Sites one and two are swales located in pasture land with runoff from cattle and a gravel road. Site three is a swale located at the end of a plowed row crop field. The research sites address the following areas in the drainage swales at all three sites: a field verification of FarmLatis modling results, Best Management Practice design, seeking the most effective approach of installing plants (buttonbush) and structures (check dams), and the improvement of the BMP modeling and cost parameters used with FarmLatis. Research at these farm sites are excellent test cases for the application of FarmLatis.

Impact Statement:

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