



2009 CSREES National Water Conference; St. Louis, MO

**Comparing Water Yield from Simulations using STATSGO and SSURGO
Soil Datasets in a North Carolina Piedmont watershed**

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Abstract:

Hydrologic modeling is commonly used for planning and decision making. Understanding the uncertainties in simulation models is recognized as an important effort in enhancing their applicability and our understanding of processes in watersheds. This study examines the effect of spatial resolution, i.e. input uncertainty, of soil data on hydrologic response in basins of different sizes in the North Carolina Piedmont.

The study areas are within the drainage for Robeson Creek, Chatham County. We used the commonly available State Soil Geographic Database (STATSGO) and Soil Survey Geographic Database (SSURGO). Simulations were performed for a period of five years without conducting calibrations using ArcSWAT. Results from the entire watershed (WW) and a nested subbasin (SB6) with similar landuse and slope characteristics were compared. Comparisons were conducted between simulated average monthly yields (mm) by using the t statistic.

We found that simulated yield values from simulations using STATSGO differed from those where SSURGO data were used. Significant differences (at $\alpha = 0.05$) were observed between results of simulations for the entire watershed using SSURGO and STATSGO and between those for the entire watershed using SSURGO and SB6 using SSURGO. Results from simulations using STATSGO for SB6 and those using STATSGO for the entire watershed or SSURGO for SB6 were not significant.

Impact Statement:

This presentation uses data collected by an ongoing water quality protection effort. Currently the results from this research are not at a stage where management implications are clearly defined.

Category: Watershed Assessment and Restoration

Type of Presentation: Oral Presentation