Best management practices, water quality and TMDLs in two East Tennessee watersheds. (A05-logan073708-Oral)

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Abstract:

Our group at The University of Tennessee, in collaboration with the Tennessee Department of Agriculture and the Tennessee Department of Environment and Conservation, is evaluating the validity of the hydrological model Better Assessment Science Integrating point and Nonpoint Sources (BASINS). BASINS/GIS integrates a geographic information system (GIS), national watershed data, and state-of-the-art environmental assessment and modeling tools into one package. Simulations of pollutant loading and transport with the BASINS model can be useful in developing Total Maximum Daily Loads or TMDL's, and determining where best management practices (BMP) would be most effective. Two impaired East Tennessee watersheds were selected for this study. During 2001-2002, water quality in the streams was monitored. Analysis was performed on monthly grab samples for nutrients, sediments and pathogens. Field data including flow rate, water temperature, air temperature, dissolved oxygen, pH and conductivity was recorded at eight sampling sites. The data obtained from these are used to determine the appropriate data inputs needed by the BASINS model to predict pollutant loading and to compare the effectiveness of different BMP's in reducing the nutrient and pathogen loading in the watersheds in our study.

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