Applying knowledge to improve water quality
National Water Program
A Partnership of USDA CSREES & Land Grant Colleges and Universities

USDA-CSREES 2007 National Water Quality Conference

Experiences of Watershed Management Plan Development in Tennessee

The United States Environmental Protection Agency (EPA) requires all watershed projects funded under Section 319 of the Clean Water Act to develop a nine element watershed management plan. This presentation will give an overview of the tools and methods used to develop a watershed management plan for Pond Creek (HUC: TN06010202013) in eastern Tennessee in 2006. The plan will serve as the implementation plan for a total maximum daily load (TMDL) for pathogens developed by the Tennessee Department of Environment and Conservation (TDEC). Some human sources of bacteria were linked to failing septic systems. Bovine sources were traced to inadequate dairy manure storage systems, direct access to the creek by cattle and run-off from poorly managed and over-grazed pastures. Estimates of soil erosion loss on a field scale were made by using the revised universal soil loss equation (RUSLE) based on estimates of vegetative cover from aerial photography. Poorly managed, over-grazed pastures and low and medium residue crops were identified as major sources of sediment (63 and 23 percent respectively). Management changes that will be implemented over the next 10 years will include restricting cattle access to the creek, reducing the size of cattle loafing areas, establishment of riparian buffers, improving septic system maintenance and manure storage and handling facilities on dairy farms. Stakeholder meetings were held with residents of the watershed to discuss potential management options for reducing pathogen, sediment and nutrient loads. Newsletters were distributed to all households in the watershed to share the results of these meetings. A website was developed to share the watershed management plan with all watershed stakeholders.

Author: Forbes Walker
University Affliation: University of Tennessee
Co-Author(s): Jonathan Hagen