

# POSTER SESSION

**The bi-national HASBOS**

**Barbara Ambrose**

National Oceanic and Atmospheric Administration

**Assessing water quality and phytoplankton in streams of the leaf river and black creek watersheds**

Nestor R. Anzola, George F. Pessoney, and  
Carmen L. Hernandez  
University of Southern Mississippi

**Long-term performance of a pump and treat system at a wood treating site**

Hamid Borazjani, Susan Diehl, Mary Hannigan,  
and M. Lynn Prewitt  
Mississippi State University

**Small farm plots and application of simulated rain to determine the potential for bacterial runoff after poultry litter surface application to bermudagrass**

John Brooks and Ardeshir Adeli  
USDA Agricultural Research Service

**Sensitivity analysis of simultaneous nitrification-denitrification process by simulation with activated sludge model number one**

Ayanangshu Dey and Benjamin S. Magbanua  
Mississippi State University

**Primary productivity, hydro perdio, and nutrient cycling in four flood-plain forest communities on a blackwater river**

Marianne K. Burke, Mark H. Eisenbies,  
Charles A. Harrison, and Hal O. Liechty  
USDA Forest Service

**Interactions between ground water and surface water in the Bogue Phalia near Leland, Mississippi, Summer 2007**

Curtis Gebhard and Katherine Stone  
U.S. Geological Survey

**National Weather Service flood inundation mapping**

Jeffrey Grascel  
National Weather Service

**Potential for recharge in agricultural soils of the Mississippi Delta**

Kim S. Perkins, John R. Nimmo, Richard H.  
Coupe, Claire E. Rose, and Michael A. Manning  
U.S. Geological Survey

**Aerobic-anaerobic lagoon evaluation in a small rural community in Columbia, South America**

Germania Salazar-Mejia, Jorge A. Ramirez, Luz  
S. Cadavid, Jairo N. Diaz-Ramirez  
Universidad Nacional de Colombia

**The phytoplankton monitoring network**

Angela Sallis  
National Oceanic and Atmospheric Administration

**Big Sunflower River water quality assessments following streamflow augmentation**

Todd Tietjen and Gary Ervin  
Mississippi State University

**1:24,000-scale watershed boundary dataset for Mississippi**

K. Van Wilson Jr. and Michael G. Clair III  
U.S. Geological Survey

## Potential for recharge in agricultural soils of the Mississippi Delta

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Ground water models predict that 5 percent or less of precipitation in the Mississippi Delta region recharges the heavily-used alluvial aquifer; however high concentrations of agricultural chemicals in ground water suggest more substantial recharge. In a preliminary assessment of the potential for aerial recharge through the agricultural soils of the Bogue Phalia basin in the Mississippi Delta, we applied a method for rapidly measuring field-saturated hydraulic conductivity ( $K_{fs}$ ) in 26 locations in cotton and soybean fields. The technique makes use of a portable falling-head, small-diameter, single-ring infiltrometer and an analytical formula for  $K_{fs}$  that compensates both for falling head and for subsurface radial spreading. Soil samples were also collected at the surface and at about 6 cm depth at each location for particle size analysis.  $K_{fs}$  values are generally higher than anticipated and vary over more than three orders of magnitude from  $1 \times 10^{-2}$  to  $5 \times 10^{-6}$  cm/s. There is also a correlation between  $K_{fs}$  and mean particle size which may prove useful in generalizing recharge rates over larger areas. A 2-m ring infiltration test is planned that will include the use of tracers and subsurface instruments for measuring water content and matric potential from the near surface to about 5 m to evaluate flow and transport below the root zone.

Keywords: