



## **USDA-CSREES 2006 National Water Quality Conference**

### **Understanding and Explaining the Relationships Between Dissolved Oxygen, Water Quality, and Natural Stream Ecosystems in the Coastal Plain of Georgia**

The most common fresh water impairment in the coastal plain of Georgia is low dissolved oxygen (DO) in the region's streams and rivers. In fact, the majority of water body segments listed on the 2004 303(d) list in the coastal plain of Georgia are in violation of DO standards established by the Georgia Environmental Protection Division (Georgia EPD). The highest percentage of DO-impaired streams occurs in the southern coastal plain of Georgia. However, research by project scientists from the University of Georgia (UGA) and USDA-ARS in 3 coastal plain watersheds indicates that low DO in coastal plain streams may be a natural condition for summer months.

Without a good understanding of the governing processes, we will never be able to truly understand nor predict DO concentrations in the coastal plain and EPA and Georgia EPD may continue investing taxpayer funds to solve a TMDL problem that may not be a problem. Our team consists of scientists, educators, extension specialists, environmental planners, and graduate students who are addressing these issues. We are now in the second year of our 3-year project which began September, 2004.

The principal objectives of our project are: to determine the causes and effects of low dissolved oxygen in the rivers, streams, and wetlands of the Georgia coastal plain; and to train and educate stakeholders about these issues and the effect that their actions have on dissolved oxygen.

Our project consists of 2 major components: A research component that is conducting hypothesis driven research on DO issues and an education, extension, & outreach component that is educating stakeholders about important regional water quality issues, TMDLs, DO, and how they as individuals or their organizations can make a difference. Our project takes place in the Georgia portion of the Suwannee River Basin.

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