USDA-CSREES 2006 National Water Quality Conference

Voluntary irrigation monitoring defined the withdrawals used in the Flint River Basin Plan

Irrigation water withdrawals from streams, ponds, and aquifers have become the primary human impacts included in Georgia's Flint River Basin Water Development and Conservation Plan, scheduled for completion in December 2005. The basin that stretches from Atlanta to Florida includes 45% of the State's 1.5 million irrigated acres. The plan was triggered and required by a state law that allowed the Environmental Protection Division (EPD), Georgia's agency charged with issuing water withdrawal permits, to freeze agricultural withdrawal permitting since 1999. Among the technical inputs to the plan, detailed groundwater and surface water models were created to predict stream flow and groundwater head changes under differing irrigation scenarios. The goal of the plan is to guide EPD permitting and drought mitigation that will maintain flows and levels within acceptable limits in both normal and drought years. The current and past irrigation withdrawal inputs to those models were derived from monthly measurements made on 305 irrigation systems (42,000 acres) of volunteer participants. From 1998 through 2004, the University of Georgia Agricultural Experiment Station and Cooperative Extension Service conducted the monitoring program and created a GIS based mapping system to accurately determine locations of all of the basin's withdrawals and irrigated fields. The presentation summarizes the role of voluntary monitoring and mapping and the procedures used to extrapolate from their farms to all fields in the Basin.

Author: James Hook
Coauthor(s): James E. Hook Kerry A. Harrison