

# PROTECTING THE SOURCE OF THE SOQUE RIVER

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**Abstract.** The Soque Source Water Project provides an initial assessment of current drinking water protection measures in the Upper Soque River watershed in northeast Georgia. Project goals included developing a preliminary assessment of sediment sources in the Soque watershed, evaluating the effectiveness of state regulations in protecting drinking water in Habersham County, Georgia, educating Soque River watershed residents concerning drinking water protection options, and designing a comprehensive watershed management plan.

## INTRODUCTION

The Upper Chattahoochee Riverkeeper (Riverkeeper) was awarded a grant by the Environmental Protection Agency to evaluate Georgia's current drinking water protection methods. The Soque River, a major tributary to the Chattahoochee north of Lake Lanier, has been targeted by Riverkeeper for water quality improvements, and was chosen as the focal point of this project. The Soque is the drinking water supply for the City of Clarkesville, Georgia, serving approximately 1600 customers. Existing regulations required by the state and adopted by Habersham County in 1992 designate the Soque as a "water supply watershed". As such, the Soque River watershed is afforded certain protections such as impervious surface setbacks. The purpose of this project was to provide a preliminary evaluation of current drinking water supply protection measures as a baseline from which to propose recommendations to the local community to protect and preserve the Soque River.

## PROJECT AREA BACKGROUND

The Soque River begins in the Tray Mountain Wilderness in the Chattahoochee-Oconee National Forest where it is classified as a primary trout stream and then flows on to the City of Clarkesville before joining the Chattahoochee River. Land use in the

watershed includes poultry farming, agriculture, pastureland, and residential development. In Clarkesville, water is withdrawn for drinking, and treated wastewater is discharged back into the river. Despite the largely rural nature of the watershed, even the Soque is not immune to drinking water problems. The Soque currently faces excess sediment problems. A 1997 EPA study showed that the Soque delivered to the Chattahoochee the highest sediment load of any tributary between the Chattahoochee's headwaters and Highway 384 (above Lake Lanier) (U.S. EPA 1997). This sedimentation may be an effect of current or historic land uses practices. The economic impacts of excess sediment can be severe. Sediment can cause drinking water treatment problems such as clogged filters, resulting in higher treatment costs. Although the City of Clarkesville does not currently report treatment problems due to sediment, projected future growth rates in the area are cause for concern.

## PROJECT OBJECTIVES

### **Project Goal 1: Watershed Assessment**

The Soque Source Water Project had several project goals to evaluate current drinking water protection measures for the Soque River. The first goal was to develop a preliminary assessment of the sediment sources in the Upper Soque River watershed. Riverkeeper collaborated with Gainesville College to perform this analysis. Land use data was used in conjunction with the Universal Soil Loss Equation to identify areas of high erosion potential within the watershed. Additionally, a water quality sampling was designed and implemented to further investigate sediment sources within the watershed. Results obtained from the model were consistent with water quality sampling data, and revealed that areas within the watershed that contained high percentages of agriculture/pastureland contributed the highest amounts of sediment. These areas are also experiencing rapid conversion from agricultural or forested land to residential development.

## **Project Goal 2: Evaluation of State Drinking Water Protection Criteria**

Georgia's water supply watershed designation (Part V criteria) requires local governments to adopt an ordinance with certain restrictions for land use based on the distance from the intake (either less than or greater than seven miles). Perennial streams within seven miles of intakes are required to have a natural stream buffer of 100-feet and an impervious surface and septic tank setback of 150-feet. Beyond seven miles from the intake, these requirements are lessened (Department of Community Affairs 1989). In an effort to assess conformity with the water supply watershed regulations, Riverkeeper attempted to catalog all developments that began in Habersham County after the regulations were adopted in 1992. Additionally, Riverkeeper examined all variances requested in Habersham County under the water supply watershed regulations. Results from this assessment reveal several shortcomings in Habersham County's record keeping and code enforcement. Variances to the water supply watershed regulations seem to be given freely, and it is unclear whether Habersham County is successfully enforcing these regulations, due to the confusing condition of its permit files. Riverkeeper has provided several recommendations to assist in effective enforcement of these regulations, including the adoption of a GIS-based system within Habersham County's Planning Department, hands-on training for BMP installation offered by the County, and required attendance of all those applying for a land disturbing permit in classes designed to educate citizens on proper erosion and sediment control during construction activities.

## **Project Goal 3: Education of Watershed Residents Concerning Drinking Water Protection**

Riverkeeper worked with the Soque River Watershed Association (SRWA), a local watershed protection organization based in Clarkesville, to complete the third project goal of developing protection strategy outreach materials for watershed residents. An "awareness survey" was distributed to approximately 1800 watershed residents to determine local knowledge of the water supply watershed regulations. Survey questions were designed to determine how much Soque River watershed residents know about the water supply watershed regulations currently in effect in Habersham County and to gauge residents' opinions about drinking water protection. Survey responses revealed that while most watershed residents are unaware of existing

regulations to protect drinking water quality in Habersham County, an overwhelming majority of survey responders are eager to protect drinking water quality and to learn more about drinking water protection.

## **Project Goal 4: Development of a Comprehensive Watershed Management Plan**

As the fourth project goal, Riverkeeper contracted with the Georgia Mountains Regional Development Center (GMRDC) to develop a comprehensive watershed protection plan to serve as a model regulation, for both the City of Clarkesville and other rural water supply watersheds in northeast Georgia. GMRDC drafted an extensive array of potential model regulations and other programs, based on data and results from the first three project goals and examples of applicable protection methods in place in other parts of the country, that could be used to protect water quality in this rural drinking water watershed. The plan provides a framework upon which to base model regulations for the Upper Soque River watershed.

## **CONCLUSIONS**

The Soque Source Water Project provided a preliminary evaluation of drinking water protection efforts in the Upper Soque River watershed. It is our hope that results and recommendations from this project will assist Habersham County in improving the effectiveness of their current drinking water protection methods.

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