



The Rocky River Post

News About Chatham's Rocky River

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\$328,670 Rocky River Nutrient Study Undertaken by N.C. State University

In February, 2011 the N.C., State University Department of Marine Earth, and Atmospheric Sciences initiated a three-year \$328,670 nutrient study of the Rocky River. The study is being conducted by Mr. Jim Rudder, as part of his PhD studies. Dr. John Fountain, Department Head and Mr. Rudder's major professor is supervising the research project.

The research project is designed to (1) identify and quantify the sources of nutrients and sediments that now contaminate the Rocky River watershed, (2) develop a model of nutrient and sediment transport, (3) quantify probable effects of land development on nutrient and sediment transport, and (4) evaluate both current and alternative best management practices in terms of their impacts on nutrient and sediment loadings. Modeling will use the Soil and Water Assessment Tool (SWAT).

The study focuses on base flows, storm-generated high flows and seasonal variation flows. Water samples are analyzed for nitrite-nitrate nitrogen, total nitrogen, ammonia, phosphorus, and chloride. All samples are screened for pH, temperature, dissolved oxygen and conductivity. Sampling locations include nineteen main stem river sites, and eleven tributary sites.

As of August 2011, preliminary findings reveal marked differences in base flows and high flows. In terms of base flows, high nitrate/chloride/conductivity measurements were observed in discharges from Love Creek. Love Creek is the receiving stream for the Siler City Wastewater Treatment Plant. Storm flow events indicate additional low nitrate concentration sources along US Hwy. 412 above the Siler City reservoirs and near Reeves Chapel Road below Siler City. Storm flows also reveal more significant nitrate concentration sources in the Tick Creek drainage area.

Future research efforts will focus on identifying specific sources of nutrient contamination. These efforts will include an analysis of various best management practices that may be able to reduce nutrient loadings from these sources.

Much of the Rocky River is Impaired

The North Carolina Division of Water Quality has determined that major sections of the Rocky River and three of its largest tributaries are "impaired". These sections of the Rocky River watershed have been designated impaired because they fail to meet water quality standards set by the State of North Carolina. Every three years, the Division creates a list of "impaired" waters in North Carolina known as the "303(d) list". The draft 2010 list was released in January. The final list, which must be approved by the U.S. Environmental Protection Agency, should be released by the end of 2012.

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