Applying knowledge to improve water quality
National Water Program
A Partnership of USDA CSREES & Land Grant Colleges and Universities

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Riparian Area Field Laboratory in a Rapidly Developing Watershed

North Creek is located on North Carolina State University's new Centennial Campus, in Raleigh, NC. Centennial Campus, a 1,334-acre site adjacent to NCSU's main campus, is a growing research and advanced technology community of university, corporate and government R&D facilities. Channelization during past agriculture practices, as well as recent urbanization, have adversely impacted North Creek. NCSU established this corridor as an outdoor field study area to demonstrate how current and future development can be done in concert with watershed protection and water quality improvements. This project is restoring the ecological integrity and functions of North Creek and its riparian corridor, as well as utilize the restoration as an opportunity to demonstrate and educate youth, policy makers, and the public and campus community about protecting and improving surface water quality, riparian corridor health, stormwater runoff control, and watershed management. Controlling exotic species (e.g., Pueraria lobata – kudzu and Microstegium vimineum – Japenise stiltgrass), while preserving the native tree and shrub community along the stream corridor, was performed by a complementary combination of grazing goats, physical removal and spot herbicides. Constructed stormwater wetlands treated 6 acres of roof tops, parking lots, roads and landscaped areas. Increased habitat diversity and shade was accomplished by planting a variety of hardwood samplings. Stream restoration featured reconnecting floodplain, replanting with native vegetation, and stream bank enhancement. Stormwater outfall retrofits addressed nutrient, metal, and sediment pollutant sources. Project partners include: USDA-CSREES (National Integrated Water Quality Program), NC Department of Environment and Natural Resources, USEPA, NCSU Centennial Campus Partnership Office, NCSU Departments (Biological & Agricultural Engineering, Animal Science, Crop Science, Soil Science, Forestry and Environmental Resources, Agricultural and Resource Economics Facilities, Design & Construction Management, and University Architect), NC Wildlife Resources Commission, US Environmental Protection Service, Carter Land and Water Design, Mulch and Seed Innovations Soil, Cotton Inc, North State Environmental Inc, Water & Environmental Group LLC, Invasive Plant Control Inc.

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