



USDA-CSREES 2007 National Water Quality Conference

[Monitoring Results for Multiple Stream Restoration Projects in the Hiwassee River Watershed of North Carolina](#)

Many stream restoration projects, once completed, are frequently not subject to post-construction monitoring. Of the monitoring programs that are established, many are limited in scope, and address only limited components of the stream system. With this lack of comprehensive monitoring, researchers and designers miss a significant opportunity for education and evaluation of the projects. Between the years 2000 and 2005, the Hiwassee River Watershed Coalition (HRWC) conducted restoration activities on over 35,000 linear feet of stream and 50 acres of riparian buffer in the Hiwassee River watershed of North Carolina. In conjunction with the HRWC, the Department of Biological and Agricultural Engineering at North Carolina State University has instituted a long-term program to monitor the post-construction evolution of the restoration sites. The comprehensive monitoring program addresses ten distinct restoration projects, totaling approximately 16,000 linear feet, in the 51 square mile Brasstown Creek subwatershed. The monitoring program at each of the ten sites includes: three-dimensional morphological monitoring, substrate analysis, structure assessment, photo documentation, bank stability analyses, vegetation and temperature monitoring, macroinvertebrate sampling, and sampling of suspended sediment. The monitored projects represent a wide range of channel types, watershed areas, restoration approaches, and land use conditions. Additionally, the ten sites range from recently constructed to six years old, and represent the work of several different designers and contractors. Monitoring data from 2005 and 2006 has been compared to pre-construction and as-built information to assess the relative success or failure of each project. Additionally, biological, vegetative, and geomorphological trends have been observed in the post-construction response of the streams.

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