

SECTION 1

BACKGROUND

The Hiwassee River Watershed Coalition was formed in the early 1990s due largely to local landowners' concern about the decline of the fishery in Brasstown Creek. HRWC began working with local agencies and the Hiwassee River Nonpoint Source Team to implement best management practices designed to help curb bank erosion and sedimentation in the watershed. In the mid-1990s, when states began to compile lists of "impaired" waters, Brasstown Creek was identified by both North Carolina and Georgia as such because benthic macroinvertebrate populations showed severe impacts from sedimentation and due to high concentrations of pathogen indicators, respectively. When the NC Clean Water Management Trust Fund was founded in the late 1990s, offering competitive grants for water quality improvement projects, the HRWC was one of the first in the mountain region to apply.

Brasstown Creek drains an 83 mi² mountainous and rural watershed in the southwestern portion of Clay County and the southeastern corner of Cherokee County, NC (Figure 1). Fifty-six percent of the watershed lies in Georgia; the lower 44 percent is in North Carolina. About a quarter of the Georgia portion drains land within the Chattahoochee National Forest making the amount of private land in each state roughly equal. The highest point in Georgia, Brasstown Bald, is found in the headwaters of Brasstown Creek and is visible throughout most of the upper Hiwassee River watershed.

In 1999, the Tennessee Valley Authority conducted an Integrated Pollutant Source Inventory (IPSI) in the Brasstown Creek watershed in support of the efforts that were ongoing. IPSI is a geographic database and set of tools designed to aid natural resource program managers and planners in implementing water quality improvement and protection projects within a watershed. The geographic database consists of information on watershed features, such as land use/land cover, stream bank erosion sites, and other suspected sources of nonpoint pollution. The IPSI process generates a unique database for the study area and provides a means to screen areas by land activities and conditions that can affect water quality. The data is managed using geographic information system (GIS) software.

To create the IPSI, low-altitude, color infrared aerial photography was taken of the Brasstown Creek watershed by TVA. Over a period of several months, the photography was interpreted by experienced photo-analysts for geographic features that contribute or are suspected to contribute nonpoint source pollution within the watershed. GIS attributes that describe the set of geographic features were then generated. HRWC staff and partners field verified much of the Brasstown Creek IPSI data to insure its viability for use in prioritizing sites for restoration.

Components of the Brasstown Creek IPSI include:

- Land cover information
- Road conditions
- Riparian buffer conditions
- Impervious cover
- Soil loss estimates
- Nutrient loading rates

Figure 1. Topographic vicinity map of the Brasstown Creek watershed.



Because of this effort, HRWC began its comprehensive watershed restoration effort with up-to-date land use information and the ability to determine which areas were most critical to reducing erosion and sedimentation and improving aquatic habitat.

Prior to stream restoration efforts, the Brasstown Creek watershed 71% forested. Approximately 20% was pasture and 5% residential. All other categories combined, including transportation corridors and commercial development, represented only 4% of the land use. In 2007, this picture has not changed much. The large livestock operations are still spread throughout the valley and the mountains are still largely forested. Some new residential development has taken place, primarily in the Georgia portion of the watershed; however, there have been no new road projects or expansion of commercial development along the road corridors. The majority of the land use shift over the 7-year period has resulted primarily in a slight loss of forestland and a slight gain in the residential category.

The Brasstown Creek watershed is still refreshingly agricultural, and thanks to nearly \$3.0 million in grant and matching funds, it has beautiful unimpaired streams with maturing woody riparian buffers!