

Aquatic Ecology at Great Smokies

A survey is underway at Great Smoky Mountains NP (GRSM) of the population genetics of brook trout, the only native salmonid species in the Southeast. For years, New England strain brook trout were stocked in GRSM streams to replace native brook trout populations that had been severely reduced or eliminated as a result of past human activity. It has been suggested by several authorities that the native fish is different from the hatchery strain. This question is being explored by a study begun in 1987, designed to determine if brook trout from park streams that were never stocked differ in any consistent way from brook trout from streams that were stocked with New England strain. Starch gel electrophoresis is being used to examine the genetic makeup of the different populations. Preliminary results indicate differences among populations for several enzyme systems, but no conclusions can yet be made regarding differences between studied and unstocked populations. The study is continuing.

A survey of park springs was begun in 1988. This preliminary effort is designed to gather basic physical and biological information on these fragile habitats in order to develop a classification scheme that can be used in implementing an inventory and monitoring program for park springs.

The entire stream network of GRSM has been digitized and proofed on the park's geographical information system (GIS). This gives us the capability to analyze stream characteristics in relation to all other digital cartographic data bases for the park, such as fish species distributions, elevation, slope, vegetation, fire history, and roads.