

The Effects of Rosgen Style Trout Habitat Restoration on Trout Populations
and Microhabitat Selection on Big Bear Creek

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Abstract

The populations of Brook Trout, *Salvelinus fontinalis*, and Brown Trout, *Salmo trutta*, of Big Bear Creek, a tributary of the Loyalsock Creek in Lycoming County have declined over the past 100 years. To counteract large amounts of sediment pollution, 176 Rosgen style boulder structures were added from 1999 to 2002. These structures were intended to help stop bank erosion and to create fish habitat. In addition to this, stocking of trout was ended in 1999.

This study determined the affect of these structures on the trout populations and trout microhabitat choice and availability. Since implementation, trout populations were shown to rise and reach equilibrium between the two species. In addition, dormant trout were shown to prefer depths ranging from 0.39 to 0.54 meters, mean velocities from 0.28 to 0.41 meters per second, and focal point velocities from 0.13 to 0.26. Preferred substrate was also found to be cobble or boulder.