

Colonization of Benthic Macroinvertebrates following construction of
Fluvial Geomorphologic Structures

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Presented to the faculty of Lycoming College
in partial fulfillment of the requirements
for Departmental Honors in Biology

April 2001

Abstract

In order to limit large scale erosion and large bed load movement on Big Bear Creek, Lycoming County, PA, members of the Dunwoody Club designed a habitat restoration project partially funded by the Pennsylvania Department of Environmental Protection. The project employed the Rosgen-style of fluvial geomorphology, a relatively new and unexamined practice on the East Coast. Construction of the 171 structures over a 1.8 mile stretch of stream required large machinery to alter the stream bed, causing large-scale substrate disruption. This study's focus was to determine the impact that substrate disruption had on the benthic macroinvertebrate community and determine a timeframe for complete return to prior levels. Immediately following construction (Fall 2000), densities ranged from 1 organism/meter² to 57 org/m² and by February 27, 2001 densities had reached between 630 org/m² to 1818 org/m². It was determined that benthos densities returned to prior levels rapidly. In addition, densities after construction far surpassed previous levels. Along with the invertebrate sampling, fish community and physiochemical conditions of the stream were monitored.