

## **LARGE AREA COMPARISONS OF FOREST MANAGEMENT PRACTICES (1951– PRESENT)**

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Species composition, tree quality, and growth and yield were the primary response variables of interest when this study was established in 1951 on the Fernow Experimental Forest in West Virginia. Silvicultural treatments include single-tree selection, diameter-limit harvesting, patch cutting, and unmanaged reference areas replicated on three northern red oak site index classes (24, 21, and 18) on 280 ha. To date, designated treatments have included nearly 70 individual timber harvests totaling approximately 98,000 m<sup>3</sup> (7 MMBF) conducted by a Forest Service logging crew. The successful bid for the 712 MBF scheduled for harvest in FY 2005 was over \$500,000. In addition to the original objectives, portions of the study have been used to evaluate epicormic branching, logging safety, aesthetics, forest hydrology, water quality, forest operations, economics, tree grade, regeneration, cull management, gap dynamics, and woody and herbaceous species diversity, and most recently, management implications of two endangered species. The study area virtually surrounds a winter hibernacula of the federally endangered Indiana bat and is the site of the second largest known population of the federally endangered running buffalo clover. Numerous scientists spanning three generations have been responsible for about 60 publications emanating from aspects of the overall study. Hundreds of camera points were established during the early years and recently thousands of photographs from these camera points have been digitized, providing time lapse imagery spanning four decades of forest management. Environmental Impact Statements, consultations with the U.S. Fish and Wildlife Service, NEPA, Monongahela National Forest Planning documents, incidental take permits, and state required BMPs are all part of the increasing administrative requirements that must be addressed to continue this study that did not exist when the study was initiated. This study provides an outstanding example of the challenges and benefits of long-term silvicultural research.