Fifty-year response of a 135-yr-old white pine stand to partial thinning in Connecticut.

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Abstract: Gold's Pine plot (1.0 acre) was established in 1932 to study the effect partial thinning on stand growth in a mature white pine (Pinus strobus)-eastern hemlock (Tsuga canadanesis) stand. In 1994 the plot was expanded to 80x80 m and remeasured. The plot is located within Housatonic State Forest in western Connecticut. The stand was 135-yr-old in 1932. Stand volume in 1932 was estimated to be 49 Mbf, 75% white pine and 25% eastern hemlock. Approximately 12 Mbf/acre has been harvested from the stand since 1944. Stand volume in 1994 was estimated to be 50 Mbf/acre. Over the 60-yr period mean diameter of white pines has increased from 20.7 to 28.8 inches. Height of codominants and dominants has increased from 110 to 127 ft with 14 trees/acre over 140 feet tall. There were 42 stems/acre in the understory (2-7 inches dbh) in 1932 consisting of eastern hemlock (64%), black birch (24%), white pine (2%), yellow birch (2%), white ash (2%), black cherry (2%), and sugar maple (2%). In 1994 there were 230 stems/acre in the understory consisting of eastern hemlock (53%), black birch (23%), striped maple (9%), sugar maple (7%), and yellow birch (6%). This case study suggests that mature white pine stands can be partially thinned to provide income and release stagnating trees without sacrificing “Big Tree" stand characteristics and continued volume growth of residuals.

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