

TEN-YEAR RESULTS OF USING OAK CLEANINGS TO MAINTAIN OAK SPECIES DOMINANCE ON THE ALLEGHENY NATIONAL FOREST

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Abstract.—The Allegheny National Forest (ANF) in northwestern Pennsylvania implemented precommercial thinning in young stands to maintain oak (*Quercus* spp.) stems in a competitive position. This administrative study was developed to test ANF standards for precommercial thinning for success in maintaining oak composition. An additional objective was to examine stand development and competitive patterns of these young mixed stands. Two component studies were installed. One study area was in a 25- to 30-year-old stand where we released intermediate and suppressed oak species, in particular white oak (*Q. alba*), to see if they would survive and improve in crown class. The other study was installed in 16-year-old stands where crop tree selection and release treatments using the ANF standards were done, with untreated control plots reserved. Eight treated and eight control plots in two stands were treated during the winter of 2000-2001 and followed for 10 years.

In the first study, mortality of intermediate and suppressed white oak stems was 84 and 38 percent in control versus treated areas. The crop tree release treatments were successful in keeping trees alive, but crown vigor declined and no trees increased in crown class. In the second study, the mortality of codominant crop trees was 13 and 2 percent in control versus treated stands. The proportion of oak stems remaining at least codominant was 59 and 78 percent for control versus treated trees. Stand-level oak composition in control stands was 11.3 percent after 10 years (11.7 percent initially). In treated stands, it was 17.7 percent after 10 years (10.4 percent initially). The crop tree release treatments successfully increased survival, growth, and composition of oak.

The content of this paper reflects the views of the author(s), who are responsible for the facts and accuracy of the information presented herein.

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