RED MAPLE SPROUTING CLUMPS DOMINATE OAKS AFTER THINNING AND BURNING

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Abstract—We studied the response of the regeneration cohort under various prescriptions aimed at restoring hardwood dominance in existing 50-year old pine-hardwood mixed woods on the William B. Bankhead National Forest in north central Alabama. We evaluated various prescriptions combining thinning of pine followed by prescribed burning using a randomized complete block design with a three-by-three factorial treatment arrangement and four replications of each treatment. Treatments were combinations of three residual basal areas (heavy thin, 50 square feet per acre; light thin, 75 square feet per acre; and untreated control) with three burn frequencies (burns once every 3 years; burns once every 9 years, and unburned control). Stands were thinned June through December, and burned January through March. We examined the sprouting dynamics of the reproduction cohort in response to these disturbances. The number of clumps of sprouts for oak and red maple, as well as the number of sprouts per clump, increased for both species with infrequent and frequent fire. The majority of red maple sprouts were in the largest size class, while the majority of oak sprouts were half as tall as the red maple. Repeated fire coupled with heavy thinning appear to be eliminating red maple from the sapling-midstory stratum, but recruitment seems inevitable due to the sprouting response of the juvenile cohort.

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