

# CHANGES IN THE STAND STRUCTURE AND SPECIES COMPOSITION OF OAK-DOMINATED COMMUNITIES FOLLOWING A PRESCRIBED BURN

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Fire suppression has affected many forest communities in Eastern North America. It has played a significant role in deterring regeneration of oaks and encouraging regeneration of more shade-tolerant species in oak dominated communities. At Kings Mountain National Military Park in South Carolina, fire suppression has altered stand structure and species composition on oak-dominated ridges. It has given shade-tolerant, fire-intolerant species a competitive advantage over shade-intolerant, fire-tolerant species. In 2000, we sampled 19 plots prior to a prescribed burn and resampled the same plots a year after burning. Prior to burning, the overstory was dominated by oaks, but advanced regeneration was dominated by blackgum, red maple, and sourwood. The pre-burn diameter distribution of oak species was bell-shaped, but the distribution of other species (including black gum, sourwood, and red maple) was reverse J-shaped. This indicates that understory composition in fire suppressed stands has shifted from dominance by relatively xeric oak species to dominance by more mesic species. One year after the burn, the oaks continued to have a bell-shaped distribution, but the number of small stems of fire-intolerant species was greatly reduced, resulting in a more bell-shaped distribution.

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