

LIGHTNING-INITIATED GROWING SEASON FIRES CHARACTERIZED OAK-DOMINATED ECOSYSTEMS OF SOUTHERN OHIO

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The persistence of oak-dominated ecosystems throughout the Central Hardwoods Region has been attributed to chronic, noncatastrophic fire regimes prior to Euro-American settlement. The nature of these fires is not entirely understood. We used lightning strike, thunderstorm activity, and precipitation data to elucidate the seasonal timing of natural fire regimes for southern Ohio. Our results suggest that fires are most likely to be initiated during the late growing season (especially August) when there is a high frequency of lightning strikes and thunderstorm activity that occurs simultaneously with dry ground-cover fuel conditions. We hypothesize that the use of prescribed growing-season fires will effectively deter encroachment of shade-tolerant hardwood vegetation and foster oak regeneration. Such fires will provide an evolutionary basis for the conservation of oak-dominated ecosystems of southern Ohio.

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