

OAKS IN PRESETTLEMENT FIRE LANDSCAPES OF THE SOUTHEAST

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Oaks are found in all physiographic provinces of the Southeastern United States and occurred in presettlement times at all fire frequencies, including 2- to 3-year fire intervals in the most fire-exposed landscapes. Both vegetation structure and species diversity have been altered greatly by some 70 years of fire suppression. In the Sandhills of North and South Carolina, Michaux (1805) reported that “Seven-tenths of the country are covered with pines of one species, or *Pinus palustris*.” However, there was a variety of oak vegetation types within the pine-dominated southeastern landscape. The original percentage of upland oaks in one flat, south Atlantic Coastal Plain landscape was estimated at less than 1, 2.3 in a gently rolling site in the North Carolina Sandhills, and 15 at a more dissected site in South Carolina near the Sandhills-Piedmont transition. On the Piedmont itself was a band of post oak savanna in South Carolina and Georgia that ran parallel to and just west of the margin of the range of longleaf pine. With only a slightly lower fire frequency, about 2- to 5 years, this type consisted of an open canopy of post oak over a species-rich grassy herb layer. Habitats on the Southeastern Piedmont were more nearly balanced between pines—principally shortleaf pine—and hardwoods, especially white oak, post oak, mockernut hickory, red oak, and chestnut oak. In the Southern Appalachians, oak habitats were more varied and fire frequencies ranged from nearly annual in areas where the fire regime was dominated by Native American ignitions to about 5 years in some chestnut oak forests, to essentially fire free areas in cove hardwood stands where species such as white oak persisted through gap-phase succession rather than through regeneration by fire. In those stands where reproduction depended on fire, loss or depauperization of the herb layer in fire-suppressed oak forests is one of the most significant effects of fire suppression.

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