AGE AND STAND STRUCTURE OF OLD-GROWTH OAK IN FLORIDA HIGH PINE

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ABSTRACT

We sampled stand and age structure of 4 high pine sites composed of old-growth sand post oak (*Quercus margaretta*) and turkey oak (*Quercus laevis*), and young longleaf pine (*Pinus palustris*), in north and central peninsular Florida. The oldest turkey oak sampled was 123 years old, and the oldest sand post oak was 230 years old. Turkey oak exhibited the greatest variation in diameter at breast height relative to age. The median age of rotten and/or hollow trees was 63 years for turkey oak and 105 years for sand post oak. Age reconstruction indicates that in 1900 minimum oak tree density ranged from 10–60 trees per hectare among sites. This study demonstrates that sandhill oak trees were historically an integral component of at least some phases of the high pine ecosystem. These data support the hypothesis that spatial patchiness and variability in fire frequency, season, and intensity historically permitted oaks to reach and maintain tree size in varying densities over time and across the high pine landscape.

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MAINTENANCE OF A VEGETATIVE FUEL BREAK AT ACADIA NATIONAL PARK, MAINE

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ABSTRACT

The Bar Harbor Fire of 1947 burned approximately 25% of Mount Desert Island, Maine, killed 3 people, destroyed >230 homes, and caused $23 million (1947 dollars) in damages. Following the fire, large areas of the island surrounding the community of Bar Harbor were converted from a volatile forest cover of mainly red spruce-balsam fir (*Picea rubens—Abies balsamea*) to early successional (and less flammable) broadleaf deciduous species. This aspen-birch (*Populus tremuloides—Betula* spp.) forest is maturing and will eventually be replaced by flammable conifers. Acadia National Park, which administers 43% of Mount Desert Island, asked a team of researchers to investigate the feasibility of maintaining a vegetative fuel break adjacent to the village of Bar Harbor. The park administration proposes using the existing deciduous forest vegetation as a buffer against wildfires. Aspen and birch are less likely than spruce and fir to support intense fires, and they resprout following top-killing. In contrast, young spruce and fir are readily killed by fire. We reviewed existing literature on vegetative fuel breaks and conducted a field survey of the vegetation along the 8-kilometer-long route of the proposed fuel break. Two hundred ninety-three nested plots were sampled. The data suggest that the overstory aspen-birch and red oak (*Quercus rubra*) cover types are indeed being invaded by conifer species. Much of the existing advanced regeneration is of conifer species, but most stems are of a size that would allow reduction in density and cover by mechanical treatments and/or prescribed fire.

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