

LONG-TERM CHANGES IN SPECIES COMPOSITION AND FOREST STRUCTURE IN AN ARKANSAS OAK FOREST

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In 1934, a detailed forest inventory was conducted of the Sylamore Experimental Forest (SEF), a 4,000-acre oak-dominated forest in northern Arkansas. We recently discovered the field data sheets of this inventory. For approximately 2,000 acres of the SEF, we compared the results of the 1934 inventory with those from our 2002 inventory of the SEF. Among overstory trees, there was a significantly higher density of red oak, white oak, miscellaneous species, and total trees in 2002 than in 1934. For midstory trees, there were significantly more white oak, hickory, miscellaneous species, and total stems in 2002. In the understory, white oak, hickory, miscellaneous species, and total tree density were significantly greater in 2002. Fire scar data indicated the study area was frequently burned between the 1840s and the early 1900s. We attribute the relatively high current tree densities to fire suppression activities over the past 70 years.

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