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# Oak Regeneration in Mammoth Cave National Park

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# Oak Regeneration in Mammoth Cave National Park

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## Abstract

Throughout the eastern United States a growing amount of research is pointing to a change in forest composition. This change, often referred to as mesophication, includes a large increase in the abundance of shade tolerant species such as maple and a concomitant decrease in oak and hickory species. Since 2011 National Park Service ecologists working with NatureServe randomly established 52 forest monitoring plots on Mammoth Cave. While these plots were not established specifically to test this issue of mesophication, they do provide a substantive data set for analysis. Our data indicate that while mesophitic species such as maple and beech comprise only a small proportion of canopy basal area within plots (11% and 4%, respectively), they comprise a much larger proportion of the sapling layer, 29% collectively. In addition, based on a proposed indicator of oak sustainability developed by the U.S. Forest Service, the extent of oak forests on Mammoth Cave may decline in the future.