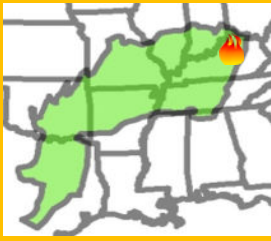


Pine/Oak Barrens Restoration on the Kentucky Cumberland Plateau

FIRE SCIENCE HOT SPOTS



In this feature, we bring into focus fire science on-the-ground

At a 250-acre State Nature Preserve located on the northern Cumberland Plateau in southeast Kentucky, the Office of Kentucky Nature Preserves (OKNP) is using prescribed fire and other forest treatments to restore pine/oak barrens, an open-canopied woodland of shortleaf pine, pitch pine, and oaks with a diverse herbaceous understory of grasses and forbs. Historically maintained by periodic fires, barrens are greatly reduced and altered in Kentucky. Managers have used girdling, mechanical mastication, herbicide, and prescribed burns to reduce undesired canopy species, understory cover, and invasive species. A primary restoration objective is to improve conditions and available habitat for rare or conservative species already present, including those in a sensitive acid seep surrounded by the barrens. However, OKNP has also begun planting bulbs of a state-endangered lily into this and other barrens sites. Natural areas managers work closely with ecologists to track vegetation changes in the site and to understand the hydrological connections between the upland barrens and the acid seep so that future management actions can be based on needs and ecosystem responses rather than a predetermined plan. The site is closed to the public due to its sensitive nature and small size.

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Top left: An early spring 2023 prescribed burn moves through an area previously hand-cut and girdled. Top right: Reduced understory on the burned and unburned sides of a fire line in spring 2023. Top inset: A rare acid seep within the pine barrens contains the largest Kentucky population of the federally threatened white-fringeless orchid (*Platanthera integrilabia*). Restoration of the barrens site evolved from an effort to maintain the seep habitat. Bottom left: Kentucky Plant Conservation Alliance volunteers and OKNP staff used spoons to plant wood lily (*Lilium philadelphicum*) bulbs into barrens sites. The lily bulbs were grown from local seed in a private nursery.

Bottom inset: The state-endangered wood lily, is restricted to barrens habitat in Kentucky. Bottom right: Partners from state and federal agencies and non-profits visit the barrens restoration site and discuss forest restoration and management on the Cumberland Plateau. Click on each photo for a full-size downloadable image, or view all [HERE](#). Photo credits: bottom left by Kentucky Native Plant Society, bottom right by Oak Woodlands & Forests Fire Consortium, all others by the Office of Kentucky Nature Preserves.

Produced by the Oak Woodlands & Forests Fire Consortium, www.oakfirescience.com.

Funded by The Joint Fire Science Program, www.firescience.gov. No. HS-23

