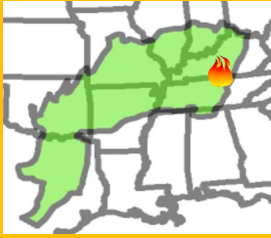


# Catoosa Savanna/Woodland Project

## FIRE SCIENCE HOT SPOTS



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

The 5,800 acre Catoosa Savanna/Woodland Project is located within the 80,000 acre Catoosa Wildlife Management Area (CWMA) on the Upper Cumberland Plateau in central Tennessee. The land has been managed by the Tennessee Wildlife Resources Agency (TWRA) since 1947. Prior to an extensive southern pine bark beetle outbreak in 1999-2000, shortleaf pine was a common overstory tree in the heavily forested WMA, often in overstocked, closed-canopy mixed hardwood-pine stands. Much of this forest initiated after cattle grazing and agriculture were abandoned in the early/mid-1900s, and following the beetle outbreak, oaks (including white, southern red, black, and scarlet) and other hardwoods (e.g., red maple, sourwood, and hickories) dominated the overstory. In response to widespread beetle-caused pine mortality, TWRA employed salvage logging, commercial thinning, and prescribed fire (top-right panel) to manage for oak and oak-pine woodlands and savannas. The rapid positive response of prairie and woodland plants (solely from the seedbank) aligned well with accounts of the region by early-European explorers (i.e., restored shortleaf pine savanna at CWMA pictured bottom-right). Among other ecological effects, these management activities promote diverse herbaceous plant communities, including species of conservation concern such as the state-listed insectivorous dwarf sundew (*Drosera brevifolia*, bottom-left).



Oak and oak-pine savannas (bottom-right) and woodlands, maintained by periodic fire and animal grazing/browsing, were historically prevalent on the Cumberland Plateau. At CWMA, fire and grazing largely ceased around 1950, and consequently woodlands and savannas transitioned to closed-canopy forests. Before (2008) and after (2016) pictures (top-left panel and inset) show the combined effects of thinning (30 ft<sup>2</sup>/acre basal area retention) and three biennial late-growing season prescribed fires on light levels and the resulting plant communities (see [Vander Yacht et al. 2020](#)).

In addition to enhancing natural communities, management at CWMA also provides educational opportunities for students and researchers (inset bottom-left) and is a valuable demonstration of natural community restoration and wildlife habitat management for interested landowners. Click on each photo for a full-size downloadable image, or view all [HERE](#). Photo credits – top-left (and inset)/bottom-left inset: Andy Vander Yacht, top-right (and inset): Clarence Coffey, others: Adam Warwick (TNC).

