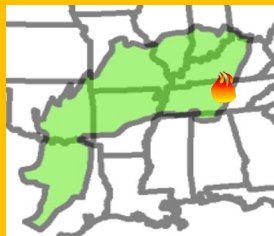


Savage Gulf State Natural Area, Tennessee

FIRE SCIENCE HOT SPOTS



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

In state ownership since the early 1970s, [Savage Gulf State Natural Area](#) is located in Middle Tennessee (Grundey and Sequatchie Counties), and includes approximately 18,000 acres. Originally reserved to protect unique geologic features of the Cumberland Plateau, and old growth trees (including white oak and shortleaf pine (SLP)) within the Savage Creek gorge, decades of fire exclusion have facilitated succession in uplands from an oak-pine woodland to a closed-canopy forest dominated by hardwood trees (e.g., red maple; upper-and-lower-right panels below). The presence of mature SLP in tracts adjacent to a newly acquired and recently logged loblolly pine plantation prompted restoration activities including prescribed fire, loblolly pine removal, and SLP planting. Throughout portions of the Natural Area, old, fire-scarred shortleaf pine stumps and snags (left panel, along with Scott Torreano (Professor of Forestry, Sewanee: The University of the South)) in forests currently dominated by hardwoods indicate that fire and SLP were historically more important components of the site's ecology than they are today (check out an associated tree-ring fire history study [HERE](#)). A National Fish and Wildlife Foundation (NFWF) grant has supported restoration activities among a diverse group of partners, including the TN Wildlife Federation, The Forest Steward Guild, and TN State Parks, and TN Division of Forestry, University of the South, Berea College, and TN Wildlife Resources Agency.



Pictured above (top-right inset, drone imagery), many invading hardwood trees were top-killed following a late-winter 2021 prescribed fire. Tree cutting and prescribed fire have greatly benefitted a population of the federally threatened white fringeless orchid (*Platanthera integrilabia*) (inset bottom-right) found in the recently acquired former loblolly plantation, in fact this is now one of the largest known populations in the world. Though dormant-season low-

severity fire (top-left inset) top-kills hardwood trees such as red maple, prolific resprouting (e.g., bottom-right) suggests the need for recurrent prescribed fire to control woody regrowth. Click on each photo for a full-size downloadable image, or view all [HERE](#). Photo credits: orchid, top-right panel and inset: Murray Gheesling; bottom right: Jason Miller; top-left inset: Todd Crabtree; pine remnant: Center for Tree-Ring Science, University of Missouri.

