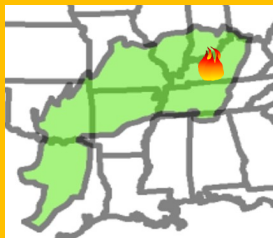


Bernheim Arboretum and Research Forest

FIRE SCIENCE HOT SPOTS



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

[Bernheim Arboretum and Research Forest](#), located in Clermont, Kentucky, consists of 15,625 acres of mature forest, grasslands, glades, caves, and streams. Prescribed fire management is used at Bernheim Forest (top-right photo) to accomplish objectives of protecting native plant and animal communities, promoting biodiversity and resiliency, and demonstrating best management practices. Of particular concern is the encroachment and succession towards fire-intolerant tree species (mesophytes), including red/sugar maple and American beech (background of top-left photo), which show to be controlled in fire-managed areas (foreground of same photo). According to Bernheim Forest staff, including Rick Caldwell (Natural Areas Habitat Coordinator/Burn Boss), Kelly Vowels (Research Coordinator), and Andrew Berry (Forest Manager), a pressing fire-science issue relates to developing an approach to reintroducing an intermediate disturbance regime (fire) in a modern-day context, particularly given the high levels of non-native plants poised to invade disturbed sites, such as Japanese stiltgrass (*Microstegium vimineum*, inset photo).



Photo: Dan Dey



Photo: Bernheim Forest



Photo: Heather Alexander



Photo: Homero Pena

To help guide management activities, Bernheim Forest promotes collaborative ecological research projects at the area. Federal, state, university, non-profit, student, and citizen researchers have been involved in research projects. Currently, fire-science studies are underway and being led by Dr. Heather Alexander of Mississippi State University. These studies

include the assessment of oak regeneration in the presence and absence of prescribed fire (bottom-left photo), and the mechanisms by which mesophytes alter forest flammability through their bark, canopy, and leaf litter traits (bottom-right photo).

