



## Fire Ecology in Ozark National Scenic Riverways

### Importance:

Ozark NSR is characterized by steep bluffs, clear running streams, unique karst ecosystems, and a rich cultural heritage. It contains diverse natural communities, because it is situated in the Ozark Highlands ecoregion, between deciduous forests to the east and tallgrass prairie to the west. Dense forests, open oak-hickory-pine woodlands, savannas, and glades or barrens contribute to this rich environment. Scientists have found that glade and woodland community types covered more of this area historically than they do today. The Ozark NSR Fire Management Plan established objectives including, “maintaining and expanding glades, and improving woodland structure and species assemblages.” Land managers believe that prescribed fire could help to achieve this objective.



*Rhyolite (igneous) glade*



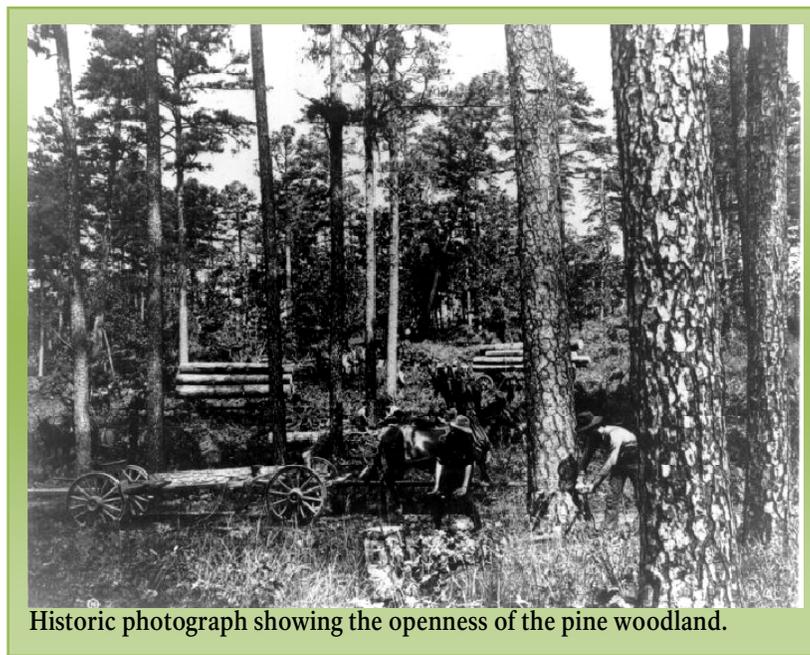
*Example of dense understory and closed canopy*

### Long Term Monitoring:<sup>1</sup>

Plant-community monitoring measures species composition, structure, and diversity. Comparing impacts from prescribed fire to changes in a plant community can indicate whether fire helps Ozark NSR to meet landscape objectives. The Fire Monitoring Plan established protocols to assess the contributions of prescribed fire to achieving resource objectives and evaluate whether prescribed fire produced any unintended effects. The Ozark National Scenic Riverways fire ecologist has worked to assess the effectiveness and impacts of prescribed fire in plant-community management.

### Status and Trends:

Recent data show positive trends in achieving management objectives in glades and woodlands. Past fire suppression may have long-term consequences in oak and pine community structure. Additionally, findings suggest that:



Historic photograph showing the openness of the pine woodland.

1. Fire managers will consider using late spring and summer prescribed fire to open woodland canopy, but they must also weigh changes in fire timing against effects of growing season fire on endangered species, such as gray and Indiana bats, and Swainson’s warblers.
2. Although managers wish to open the woodland canopy and reduce shade tolerant understory plants, they must also support regeneration of key tree species such as oaks and pines.

Heartland Network Inventory and Monitoring Program of the National Park Service. Visit [www.nps.gov/im/units/htln/index.htm](http://www.nps.gov/im/units/htln/index.htm)

*... protecting the habitat  
of our heritage*



<sup>1</sup>Smith, A., D. Swanson, and S. Leis. 2008. The fire ecology of Ozark National Scenic Riverways. Natural Resource Report NPS/HTLN/NRR—2008/031. National Park Service, Fort Collins, Colorado.