Species such as this rare Diana fritillary greatly benefit from frequently burned forests.

Related Extension Publications

NREM-2877—Fire Effects in Native Plant Communities
NREM-2878—Fire Prescriptions for Maintenance and Restoration of Native Plant Communities
E-927—Using Prescribed Fire in Oklahoma
E-990—Influence of Timber Harvest and Fire Frequency on Plant Community Development
E-998—Patch Burning: Integrating Fire and grazing to Promote Heterogeneity
L-314—Biodiversity and Ecosystem Management
L-270—Snags, Cavity Trees, and Downed Logs

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Natural History
More than 17 million acres of post oak - blackjack oak forest, called the Cross Timbers, spread from Kansas thru Oklahoma to northern Texas. Historically, species such as elk, white-tailed deer, and bison coexisted with Native Americans and fire in this mix of tallgrass prairies, oak savannas, and oak forests. These features were also present in the oak-hickory and oak-pine forests of the eastern part of the state. The discontinued use of fire in Oklahoma’s forests has allowed the density of trees to increase, which has resulted in the loss of understory vegetation, mast producing trees, and biodiversity that are beneficial to wildlife.

Wildlife Foods
White-tailed deer, turkey, bobwhite quail and many other wildlife species readily utilize the acorns provided by mature fire adapted trees. This mast provides the carbohydrates and fats for wildlife when building energy reserves for the winter. When forests in Oklahoma experience disturbances like fire, a herbaceous layer of grasses and forbs (broadleaf plants) also becomes abundant, providing a variety of food resources in these forests.

Wildlife Cover
Most of Oklahoma’s game species do not require large tracts of forest for their habitat requirements. However, forest cover can be important for wildlife during inclement weather, and most of our game species can be found in forests that are properly managed. Oklahoma lies on the westernmost portion of many eastern bird ranges and well managed forests provide critical habitat to these species. Additionally, herbaceous cover in the understory of forests is important for many small mammals and ground nesting birds.

Prescribed Fire
Using prescribed fire in oak and pine forests can greatly increase their attractiveness to wildlife species by stimulating desired herbaceous plant growth. Frequent dormant or growing season burns every 2 to 4 years will reduce the understory woody plant growth, while leaving the large overstory trees, creating a park-like woodland. Not only is the visibility of wildlife increased by burning, but the open understory created by burning also attracts many non-game species such as red-headed and pileated woodpeckers, indigo buntings, and many species of insects that are beneficial to game birds.

Frequently burning a wooded site can create twice the number of plant species, three times the herbaceous cover, and four times the herbaceous biomass, thus providing abundant cover and food resources for wildlife.

Landscape Heterogeneity
While burning oak forests may have many benefits for wildlife, snags and small areas of dense woody cover do benefit some species such as birds that nest in shrubs or the forest midstory. Thus, land managers should consider leaving some areas unburned.