

# Benefits of Prescribed Fire

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## *How can prescribed fire benefit my land?*

There are several reasons to consider prescribed fire for your land. Restoring native prairie and wildlife habitat, improving grazing lands, and mending the ecosystem can all benefit from a management system that includes fire. Prescribed fire is not a "magic bullet" that alone will erase past management failures or make up for improper management in the future. However, prescribed fire plays a vital role in a whole system of processes that nurtures the native prairie and its inhabitants. Think about why you want to protect and preserve your native grassland and see how prescribed fire can help....

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## *How can prescribe fire help to restore the ecosystem?*

Fire enables ecological drivers (climate, herbivory, fire, and their interaction) that allow ecosystem processes such as nutrient cycling, energy flow, and water cycling to begin to function again. Fire frequencies of various vegetation types are obtained from fire scars on growth rings of trees and by knowing the frequency needed to prevent the encroachment of brush and trees, particularly eastern redcedar into prairies, shrublands, and forests. Fire season can be determined by the frequency of lightning induced fires and historical accounts. Management for pre- European settlement landscapes and associated ecosystemdrivers (fire and herbivory) will, at least in part, accomplish each of the management goals previously mentioned because much of the difficulty in attaining these goals is due to fire suppression.

### **Fire Creates Beauty**

For some people, the mention of fire suggests images of scorched earth rather than beauty, but prescribed fire can greatly improve the appearance, recreational value, and productivity of the land. In prairies and shrublands fire can maintain broad vistas and control invasion of non-native woody plants. Reducing the woody under-story in native forests can create a park-like setting while leaving the large trees. Removal of dense under-story and old vegetation will increase the visibility of wildlife and wildflowers. Many species of wildlife are attracted to burned areas and many plants including wildflowers are stimulated by fire. There is increasing interest in managing the land to appear as it did before European settlement. This interest is driven by many objectives including habitat restoration for endangered species and wildland fuel reduction as a public safety issue. Burning areas with a fire frequency and fire season that mimics historical fire regimes may be the most important practice for accomplishing this goal.

### **The Dreaded Eastern Red Cedar Tree**

Approximately 1500 acres of grassland in the Hills is encroached every year by woody vegetation, including Eastern Red Cedar. The primary factor allowing spread of the tree is the absence of fire. It only takes about 250 ERC trees/acre to reduce forage production by 1000 lb/acre and 375 trees/acre to cut forage production in half. As the population of seed producing trees increases, the future in red cedar populations will likely be very rapid, accelerating the disappearance of Loess Hills native prairie. Reintroducing fire to the landscape is vital to control of Eastern Red Cedar trees.

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## *How can prescribed fire benefit my livestock production?*

Prescribed fire can improve livestock grazing operations by increasing gains, improving forage quantity and quality, improving grazing distribution, and controlling parasites and diseases. Forage production relative to the timing or season of the burn varies from year to year and cannot be predicted. Making prescribed fire part of a native pasture management strategy will create a high functioning grazing system, bringing greater returns to the operation.

### **Fire Packs on the Pounds**

Prescribed fire is one of the most beneficial tools that a livestock operation can use. Studies in Oklahoma indicate stocker cattle gains can increase 10 to 15% and body condition scores can increase by one on cows when fire is made part of the management system.

### **Eat Your Veggies**

Grass quality, palatability, and availability are improved because fire removes dead plant material and improves access to new growth. After a fire, digestibility and protein content of ingested forage is higher. If soil moisture is adequate, grass yields increase because baring and darkening the soil surface allows it to warm more quickly and stimulate earlier growth, and because competing weeds are suppressed.

### **Bug Control**

Some troublesome pests, such as ticks and disease-causing fungi, can be controlled with fire. However, for most parasites, control by fire last only during the growing season after fire. Ticks pose a serious health risk to humans, pets, livestock, and wildlife because of the diseases they can carry. Domestic animals can also contract fatal diseases from ticks. Decreased livestock production can cost livestock producers thousands of dollars each year. Research has shown that burning annually significantly reduces populations of both internal and external parasites in birds and mammals. The improvement in production can be traced to an improvement in forage quality and quantity, an improvement in forage availability, and reduction in habitats (relatively cool, shaded, and damp conditions) that support parasites.

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## *How can prescribed fire improve wildlife habitat?*

Wildlife species include all non-domestic animals, both common and endangered. Their habitat requirements are highly variable and thus fire may be beneficial or detrimental depending on many factors such as timing, season, and size of the burn. However, fire is a necessary management practice for most wildlife species and their habitats. The maintenance and restoration of major habitat (i.e. vegetation) types require periodic fire.

### **Fire Saves Wildlife**

Research has shown very few cases of direct mortality on wildlife and benefits to the habitat far outweigh the rare cases of direct mortality. Animals usually escape by running or flying away, going below ground, or moving to unburned islands of vegetation. The primary fire effect on wildlife is habitat alteration, not mortality.

### **Trees Leave Out Certain Wildlife**

Unfortunately, a misconception exists among some people about wildlife habitat in general and the role of trees for wildlife habitat specifically. Some think that trees are necessary for wildlife habitat. However, many wildlife species do not require trees and are adversely affected by their presence. For example, wildlife species that occur in prairie and shrubland vegetation types do not require trees and in fact are precluded from their habitat if trees are allowed to invade or are planted. Thus, fire can be an easy, inexpensive, and natural tool for eliminating invasive trees from sites that historically were prairie or shrubland, regardless of how they got there. Popular game species such as bobwhite quail, whitetailed deer, and wild turkey also require fire to maintain high quality habitat. Some wetland habitats also benefit from periodic fire to maintain desirable habitat conditions. Fire is used to maintain or change habitat structure and composition. Fire can improve forage and browse availability, quantity, and quality. Fire also will reduce internal and external parasites on wildlife.

### **Fire Doesn't Threaten Endangered Species**

Endangered or threatened species are usually species that require a very specific set of habitat conditions (narrow ecological niche). If those conditions are not available, then the species will not occur on the site. Prairie birds are one example. Species such as the lark bunting and many others will not use a site with as few as one or two small trees per acre. When fire is returned to the system and the trees are eliminated, prairie birds will use the site once again provided that grazing management is appropriate. Other examples of declining species that are affected by fire suppression include the lesser prairie-chicken, and in some cases, the greater prairie-chicken.

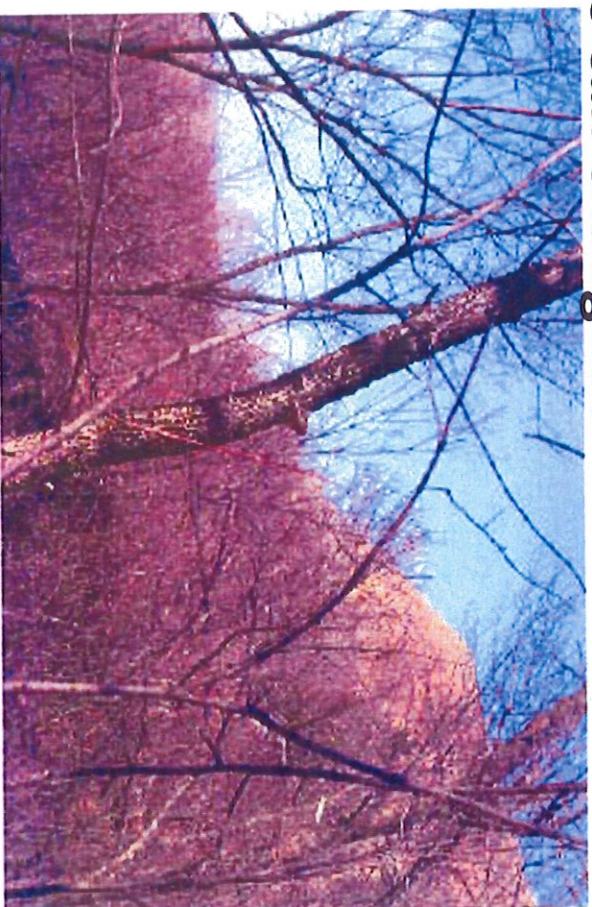
*Excerpts adapted from: Oklahoma Cooperative Extension Service  
"Fire Effects in Native Plant Communities" (F-2877)  
and "Intensive Early Stocking" (F-2875)*

*and "Red Cedar and Livestock Production" West Central Research and Extension Center, North Platte, NE*

**Look at what 100 years without fire can change....**



**Murray Hill, Harrison County, ca. 1900**



**Murray Hill, Harrison County, March 2005**



**Pisgah area, Harrison County, ca. 1900**



**Pisgah area, Harrison County, March 2005**