

FIRE IN TALLGRASS PRAIRIES



U.S. DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE



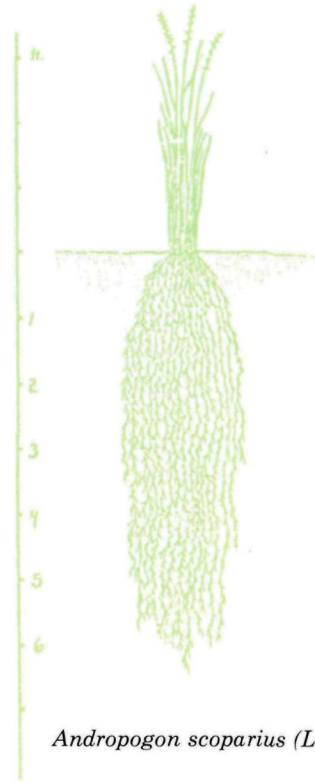
FIRE:

A Natural Process

Natural fires have always been a frequent occurrence in the prairies of the central North American continent. Lightning-caused fires are as much a part of the prairies as are the naturally-occurring forces of droughts, blizzards, native insect and disease outbreaks and tornadoes.

Through the centuries, the native plants and animals of the prairies have evolved in the presence of fire and are well adapted to periodic burning. Grasses are one example. The main growing part of most prairie grasses is below the ground; therefore, they are not permanently damaged by surface fires and are able to grow back after burning. In addition, fire benefits the prairie ecosystem by reducing the amount of dead plant material or litter on the ground. Excessive accumulations of litter can lower the soil temperature, causing normal bacterial activity to drop and thus retard plant growth. Also, too thick a cover of litter tends to intercept and absorb rainfall, causing a loss of water to the soil. Periodic burning reduces the litter and improves soil moisture, releasing nutrients that help to recycle materials through the ecosystem. As a result, flower stalk production and seed yields increase, leading to more vigorous, healthy vegetation.

Many forms of prairie wildlife have also adapted to recurring fire. While a few instances of animal mortality have been reported from prairie and grassland fires, they are offset by the general benefits derived from improved habitats and increased plant productivity and growth stimulation.



Andropogon scoparius (Little Bluestem)

A prairie plant like little bluestem is usually a long-lived perennial with only the above-ground parts dying back in winter. The root system will often be deep and more extensive than the above-ground portion of the plant. As a result, a prairie plant is adept at surviving drought, grazing and fire.

Fire History in the Prairies

Early plains travelers often described prairie fires. George Catlin, an artist and frontiersman who traveled throughout North America from 1830-1838, wrote this description of "Burning Prairies":

"The prairies burning form some of the most beautiful scenes that are to be witnessed in this country, and also some of the most sublime. Over the elevated lands and prairie bluffs, where the grass is thin and short, the fire slowly creeps with a feeble flame, which one can easily step over . . . But there is yet another character of burning prairies . . . Where the grass is seven or eight feet high . . . the fire in these travels at an immense and frightful rate."

(From Catlin, George. 1841. *Letters and Notes on the Manners, Customs, and Condition of the North American Indians*, Vol. 2.)

During the years prior to pioneer settlement, many prairie fires were deliberately started by native American Indians. Fire was an important part of Indian life. In addition to domestic uses, the Indians set fires to kill flies and mosquitoes and to reduce ground cover for ease of travel. Some tribes of plains Indians even used fire for military objectives, both as a tactical weapon and as a means of defending themselves from other warring tribes. The most common use of fire, however, was for hunting. On the prairies the Indians used fire to drive or surround buffalo or to attract buffalo to areas of newly sprouted grass which they preferred. In fact, the frequent use of fire by Indians may have led to the extension of prairies into the forested regions of the Midwest, an area known as the Prairie Peninsula.

FIRE: NPS Policy

Today fire is considered an important environmental factor in prairies and other natural areas. Scientific research has shown that fire is not an enemy but a natural phenomenon and an integral part of ecosystems, especially in national parks and wilderness areas. Fire policies throughout the United States are therefore changing from total fire suppression to a broadened concept of fire management.

Areas of the National Park Service with reestablished or remnant tallgrass prairies use controlled prescribed fires to gain the benefits of burning without the danger of a wildfire. Prescribed fires are used when they do not endanger human life or property and when they can be contained within predetermined boundaries.

Though our policies toward managing fire have changed, fire's potential force and destructive power has not. We must still be careful with our use of fire. An unwanted fire caused by human carelessness can have disastrous effects.

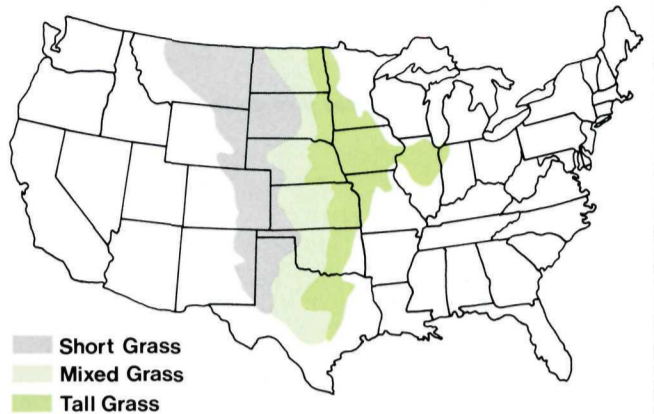
What Is Fire Management?

It is based on the management objectives of the agency and incorporates fire prevention, suppression and prescribed fire activities.

All national parks are reviewing these alternatives for managing fire and many are in the process of developing active fire management plans aimed directly towards improving the condition of natural ecosystems.



MID-CONTINENT PRAIRIES



The grasslands of central North America can be divided from east to west into tallgrass, mixed-grass and short-grass prairies. The changing stature of the grasses corresponds with a decrease in rainfall from east to west. Tallgrass areas receive enough rainfall to support trees, but many kinds of trees cannot grow when they are frequently burned. When fires are not part of the environment, trees begin to invade tallgrass prairies and the natural character of the ecosystem is changed.

Map courtesy The Nature Conservancy

In the tallgrass prairie parks, total fire suppression is the established priority until a fire management plan is approved. Parks which have completed fire management plans now have the option of using a combination of prescribed burning, prescribed natural fire and fire suppression.

Developing a fire management plan for a park involves three principal steps: (1) Determination of the natural role of fire in the park's ecosystem. (2) Evaluation of the natural role of fire in relation to social, economic, legal, and cultural values, and the current state of the ecosystem. (3) Consideration of all environmental impacts inside and outside the park's boundaries.

The National Park Service's Midwest and Southwest Regions include ten park units that have remnant or reestablished tallgrass prairie. For more information about a specific park's prairie or fire management policy, please contact the Superintendent at:

Chickasaw National Recreation Area
P. O. Box 201, Sulphur, OK 73086

Effigy Mounds National Monument
Box K, McGregor, IA 52157

Fort Scott National Historic Site
Old Fort Boulevard, Fort Scott, KS 66701

George Washington Carver National Monument
P.O. Box 38, Diamond, MO 64840

Herbert Hoover National Historic Site
P.O. Box 607, West Branch, IA 52358

Homestead National Monument of America
Beatrice, NE 68130

Indiana Dunes National Lakeshore
1100 N. Mineral Springs Road,
Porter, IN 46304

Pea Ridge National Military Park
Pea Ridge, AR 72751

Pipestone National Monument
P.O. Box 727, Pipestone, MN 56164

Wilson's Creek National Battlefield
Route 2 Box 75, Republic, MO 65738

Text by Janet Gehring and Gary Willson

Photo by Tim Vinyard

Cover: "Prairie Meadows Burning" by George Catlin, courtesy National Museum of American Art, Smithsonian Institution. Gift of Mrs. Joseph Harrison, Jr.

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