

02-047W



VIEWING FIRE AS A FRIEND.....

Early man's life on earth became much easier with the harnessing of fire, enabling him to endure the rigors of cold weather, prepare a variety of foods, and stave off predators.

Somewhere along the way, a fear of uncontrolled fire caused us to change our thinking, and fire became a menace to be stopped at all costs. Perhaps now we have come full circle, realizing that fire is necessary to preserve those prairies and other natural areas that we appreciate and want to preserve for the future. Just as a rainforest must have rain, many of our other ecosystems must have fire. Smokey was wrong.....fire is not always bad.

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FIRE: NATURE KNOWS BEST



Fire has always been a part of the natural world. Long before recorded history, fire was a cyclic phenomenon, along with droughts, floods, tidal movements and the passing of seasons. All of these played a vital role in sculpting earth's many ecosystems and the plants and animals which are unique to them.

For countless millennia, fire periodically scorched the Illinois landscape, defining the tallgrass prairies and oak savannas. Tree rings provide historic evidence that forest fires occurred on a fairly regular basis. The older, thick-barked oaks usually survived all but the most intense fires. Their acorns quickly sprouted into new seedlings which thrived in the ash-covered soil, bringing new life once again to the open savannas.

Prairies responded to burning by producing an abundance of colorful forbs the following spring and summer, as dormant seeds were able to germinate, no longer smothered by the heavy thatch from grasses. The grasses also prospered, providing more forage for deer, elk, and bison.

Native Americans knew the nature of fire, and learned to use it to their advantage, maintaining open areas which favored increased numbers of grazing animals upon which they were partially dependent for survival. Later, white settlers also used fire to encourage the growth of fresh grasses for their horses and livestock, and to make travel easier through the Grand Prairie.

ALONG CAME "SMOKEY"

By the early 1900's, those involved in protecting the nation's forests began to suppress wildfires because they destroyed timber. In 1945 the American public was introduced to "Smokey Bear." For nearly 40 years, Smokey's crusade to prevent forest fires was taken to heart, and the idea that *all fires are bad* became ingrained in the minds of ordinary citizens and public land managers alike.



As time went by, biologists noted that some ecosystems were changing. Here in Illinois, the open oak savannas began to grow dense and shaded as new species moved in, and there were fewer oak seedlings surviving. Hill prairies disappeared as woody plants invaded and crowded out sun-loving prairie grasses and forbs. In other areas of the country, some biologists were conducting "controlled burns" and were discovering surprising results. Productivity in southern pine forests was increased by periodic burns. In California, it was learned that the giant Sequoias depended on fire to kill competing tree seedlings. In Michigan, the Jack pines upon which the endangered Kirtland's warbler depended were declining because fire was needed for the pine's tight cones to burst open and release new seeds.

WHAT SMOKEY DIDN'T KNOW.....

Wildfires are powerful forces of nature, and they can destroy homes and endanger lives. But, we have to realize that fire is a natural, normal part of many ecosystems. In fact, it is necessary for their health. Without periodic fires, many such habitats will eventually disappear through successional changes. As they do, the biodiversity of natural areas is lost.

Not all fires are the same. "Cool" fires creep slowly along the ground, burning grass, shrubs and saplings while leaving older, mature trees unharmed. Such fires help to maintain oak savannas, which, by nature, have a more open understory amid scattered large



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trees. We tend to hear much more about the "hot" fires, which burn intensely and—in forests—result in "crown" fires which leap from tree to tree and burn everything in their path. Hot fires are often the result of a buildup of leaves and combustible materials over a period of years. Controlled periodic burns can be used to reduce the risk of more destructive crown fires. Most fires tend to be a mixture of hot and cool, resulting in a mosaic of burned and unburned patches over the landscape.

Even though wildlife can be lost or temporarily displaced due to fires, other species are quick to move into the area nearly as soon as the ashes have cooled. Finches look for seeds which have been liberated by the fire's heat. Woodpeckers glean insects from partially burned trees. Other species are drawn to prairie fires, where they search the scorched grasses for grasshoppers and other insects which suddenly have few hiding places. In nature, species have adapted to natural disasters over thousands of years. While individuals may be lost, populations will recover and prosper.

FIRE AS A RESTORATION TOOL.....

Over the years, many Illinois plant communities have become degraded because of the invasion of species which do not belong there. Sometimes, the invaders are other native species which take over because they have not been controlled by natural fire cycles. Examples include sugar maples in what were formerly oak-hickory woodlands, and cedars and shrub dogwoods in hill prairies. In other cases, the invaders are exotic plants which have been introduced and which compete with the native species for space and nutrients. Such plants as buckthorn, multiflora rose, and bush honeysuckle have taken over many habitats which were once fine natural areas.

Through experimental management on various tracts throughout the state, we have learned that prescribed burns and brush removal can help restore natural ecosystems. In the last few years, much restoration ecology work has been carried out in forest preserves, state-owned natural areas, and on private lands using these techniques. Many more projects are planned in order to return more of Illinois to what we know was "pre-settlement" condition.

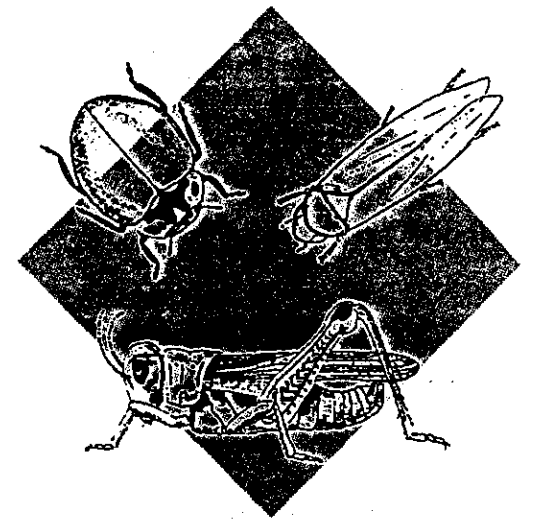


WHAT ABOUT THE BIRDS???

When trees and brush are removed from an area, what is the impact on birds? Anytime an area undergoes large-scale change, some species are going to be lost. At the same time, other species will find the newly-restored habitat attractive and will move in to replace them. In deciding whether or not to restore native ecosystems, we must look at which species are losing numbers due to lack of habitat. It is our threatened and endangered species that are most in need of help. Next are those species of "special concern" which seem to be declining, but are not yet at the point of being added to the T&E list. Populations of birds of open savannas, such as the red-headed woodpecker, have been on a downhill trend.

Studies at controlled sites in central Illinois have shown that savanna restoration efforts lead to significant increases in the red-head, as well as Baltimore orioles and Eastern wood-pewees. At the same time, species such as the scarlet tanager and wood thrush diminished in numbers. This is not surprising, since both of these prefer more heavily forested areas rather than open woodlands.

Prairie restoration efforts in the state have increased the amount of habitat available for Henslow's sparrows, upland sandpipers, short-eared owls, harriers, and other threatened and endangered grassland-dependent species.



FIRE'S IMPACT ON PRAIRIE INSECTS.....

Insects are the largest and most diverse group of animals in native prairies. They are major pollinators for the many colorful forbs. Many entomologists are concerned that too much fire—while great for encouraging the growth of prairie plants and discouraging woody and invasive species—may not be good for all of the insects. Detailed studies have revealed that some species recover quickly, but the effects of fire on prairie insects remains controversial. Greater study is needed to determine how often prairies can be burned without losing insect diversity. Until then, the most prudent action would seem to involve a division of prairies into sections and doing partial burns, leaving some portions unburned each year on a rotational basis. As more data becomes available, perhaps more specific recommendations can be made for managing both prairies and their insect populations.

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The Illinois Audubon Society

Established 1897

Marilyn F. Campbell
Executive Director

25 July 2002
Bill McClain
I.D.N.R.
One Natural Resources Way
Springfield, IL 62702

Dear Bill,

The letter accompanying our Wildlife Preservation Grant for this project indicated that I should send the final report to Vern Kleen.

Since he has retired, I am sending it to you and hoping that you will see that it is processed. I want to thank you for your input on the brochure, and hope that you like the final product. We have already received lots of good comments on it, and I hope that it will be widely used.

You can see that we had quite a lot of copies made for the money available, so there should be plenty for all to use and distribute!

Sincerely,

Marilyn F. Campbell
Executive Director

