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Prescribed Fire on the Hoosier National Forest




America's Great Outdoors


Forest Service
United States Department of Agriculture

Prescribed fire is the planned and deliberate application of fire used to meet specific management goals. Hoosier land managers have learned a great deal on the benefits of prescribed fire. Our goal is to return fire to the landscape, which will help maintain forest diversity.

In the recent past, fires were suppressed, so species composition was quickly being lost. Wildlife habitat and plant diversity were in jeopardy.

Historical Fire

One of the powerful tools Native Americans had was fire, and they used it to change the landscape. Sometimes to clear the woods, to create a berry patch, to open up the forest floor for cultivation, or perhaps to improve grazing for the game they hunted.

The cumulative impact of burning by Native Americans profoundly altered the landscape. When first encountered by Europeans, many ecosystems were the result of repeated fires. Fire studies indicate an average fire interval of 8-12 years in much of Indiana.

Woodland Indian cultures practiced a form of agriculture in which forests were cleared



The Grass Fire, Frederic Remington 1908



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and burned to create open areas. By the time the Europeans arrived, the landscape was a mosaic of croplands near settlements, abandoned clearings of young regenerating forests, and open forest stands dominated by fire-adapted species such as oak, hickory, and walnut.

The overuse of fire by settlers to clear brush and slash piles and to kill "varmints," combined with other poor farming practices soon resulted in disastrous conditions over much of our landscapes. Fire suppression followed and over time, the lack of fire in southern Indiana resulted in changes to our ecology.

Today, we are getting prescribed fire back in our ecosystems. This helps put things back in balance and allows fire-adapted species such as oak, hickory, and our natives grasses, to once again have a niche in southern Indiana.

Due to our efforts to return fire to the Hoosier we've found species are rebounding. Inventories have found

- 3 new populations of Indiana state endangered plants.
- Several endangered and rare insects that exist nowhere else in Indiana, or only occur in isolated sites in nearby states.
- Entomologists found two new leafhopper insects new to science.

Why are we burning Forest areas?

Many of the reasons to burn Forest areas are the same as the Native Americans had for using fire, but now research has discovered even more ecological values. It is also one of the most economical tools we have to impact large areas of the landscape.

Prescribed fire is used to....

Improve Vegetative Health

America's native vegetation is victimized by a plague of exotic insects and invasive plants that have entered our country through foreign trade. Many of these are controlled or eliminated by the use of fire. Periodic burns cause plants to resprout. For wildlife, the new sprouts are more palatable and higher in protein and nutritive content than the older stems. Seed production can be significantly increased through burning.



After the flame front, native grasses are already green and ready to use the released nutrients to put on new growth.



Wide fire lines and specific weather conditions ensure prescribed fires are done safely and stay within their boundaries. The picture below shows an area four months after a burn.



Maintain Wildlife Habitat

Forest openings increase the production potential for animal species that require early successional habitats for some portion of their life. They provide important habitat for insects, and for the birds that feed on insects. Effects of the fire on animals vary by the season, intensity and severity of the fire. Burning during nesting season is generally avoided.



In open areas, fire will knock back brush and trees, such as the eastern red cedar, which are invading. Without fire the opening would soon fill in with cedar, sassafras, and other successional trees, and lose its value as openland.

Fire rarely burns evenly through an area. Often clumps of vegetation are left unburned and these provide a refuge for animals. The field shown here illustrates how some areas are left unburned.



In forested areas, prescribed fire is used where foresters wish to encourage fire tolerant species such as oak and hickory. These species provide excellent nut mast for wildlife and are preferred tree species for deer, turkey, squirrel and many other wildlife. Occasional burns will benefit thicker barked species such as oak and hickory while knocking back thin barked trees such as maple and beech.

Reduce Forest Fuels

The dry vegetation in forest openings, storm damage and dead leaves in the forest provide fuels for wild fires. Over time, the matted vegetation, logs, and downed trees accumulate and can become a tinder box for fire. Periodic prescribed fires reduce the chances that fuels will build up in an area making suppression of wild fires more difficult.

By timing prescribed burns the intensity of burns can be minimized by burning at a time when there is sufficient fuel and soil moisture to prevent damage to the soils.

Restore Barrens and Savanna Ecosystems

Within the Hoosier are unique areas of barrens, chestnut oak savannas and other ecosystems which are dependant on fire. In the absence of fire, other species less tolerant of fire move in and change the species mix.

Prescribed fire reduces tree density and increases sunlight to the ground. This open forest promotes species diversity through the reproduction and growth of species endemic to barrens and savannas.



Smoke Management

Prescribed fires generate smoke. However, based on atmospheric conditions, smoke disperses quickly and fire managers work with the weather service to minimize problems for adjacent communities.

