

## **Burning for Bigger Buck's**

**One of the most cost-effective ways to manage whitetail habitat is to set the woods on fire. Here's how to do it in a way that helps wildlife without hurting people or property.**

***By Dr. James C. Kroll & Ben Koerth***

**One four-letter word, perhaps more than any other, strikes terror into the hearts of "civilized" man: FIRE!**

**That's understandable. Tragic fires take many human lives. And, each year, thousands of acres are consumed by wildfire. In fact, in the Pineywoods of East Texas, where our Institute for White-tailed Deer Management & Research is located, prominent signs erected around the county warn of the current fire danger status.**

**But fire in the woods isn't always bad. In fact, done right, it is one of the best ways to improve deer habitat.**

**Much of North America's landscape was sculpted by intentionally set fires long before the first Europeans arrived. Were Native Americans pyromaniacs, or did they have a reason for burning the land? Most likely it was the latter.**

**The father of wildlife management, Aldo Leopold, once said the three tools of the wildlife manager were the axe, the plow and the match. In other words, wildlife thrive on disturbance, including that resulting from fire.**

**The modern human vision of wilderness is a place where the forest is old and the trees are tall . . . a place where you can walk for miles without stumbling through thick undergrowth. That might be a nice place for recreation, but it cannot support many species of wildlife — especially whitetails.**

**A typical mature Eastern forest can barely support a healthy deer per 50 acres. The crowns of those majestic trees interlock to keep nearly all sunlight from reaching the ground, so nutrients remain tied up in their ancient bodies. If you're a deer it might be a nice place to visit, but only if you bring your lunch with you!**



Annual burning of some habitats is a good way to recycle nutrients and keep browse within reach of deer. But not all sites should be burned each year. Photo by Gordon Whittington

The whitetail is even more a creature of disturbances than are most other animals. Its entire biology is geared to taking advantage of conditions created by wildfires, tornadoes, hurricanes, ice storms and the like. Once the canopy cover is removed, abundant sunlight and nutrients produce a rapid flush of green vegetation rich in protein, calcium and phosphorus — all of which are needed for nursing fawns and growing large antlers. In most such cases, it takes only seven years for a deer herd to go from low to high density.

In ancient times there was no pattern to such disturbances, only chance. After all, who can predict the time and place of the next tornado? So early man took it upon himself to do things in a more planned manner. Modern deer management only mimics these time-tested methods for increasing forage and deer numbers.

Can fire be part of your own management program? Yes. Here's how.

### A WILDLIFE FIRE IS A PRESCRIBED FIRE

There is a huge difference between a "wildfire" and what we call a "prescribed" fire. The latter, as indicated by its name, is a management activity prescribed and planned by a professional or trained land manager. Wildfires, by their nature, are unplanned events resulting from the buildup of dangerously high fuel loads. Who can forget the horrible conflagration of the Yellowstone fires in the late 1980s? Some say these were just natural events; however, the fires were so hot that much of the land was sterilized of organic matter and seed stocks. It thus has taken many years to see vegetation return to this beautiful park.

What caused such a disaster? Over-protection from fire, or what we call the "Smokey Bear Syndrome," had a great deal to do with it.

**Prescribed fires serve many purposes, not all of them related to wildlife habitat. Regularly burning the forest or openings reduces fuel loads, so that any later fire (planned or not) will burn gently through the understory, rather than “climb” into the canopy. This lowers the risk to people and property.**

**Another important use for intentional fire is insect control. With Lyme disease reaching epidemic proportions in some regions, there is a need for a natural way to control the ticks that carry this deadly disease.**

### **FIRE AS A HABITAT MANAGEMENT TOOL**

**At our various research facilities, over the years we have conducted many studies involving the use of fire as a management tool. But we are not the only ones conducting such research; in fact, Tall Timbers Research Station in southern Georgia probably has done more research on fire ecology than any other research group. These and other projects have produced sound principles of putting fire to use on your hunting land.**

**Remember, the overriding philosophy behind this “Building Your Own Deer Factory” series is sound food-source management. By providing proper nutrition, you can solve most management problems. Even if you have the best genetic potential and let bucks grow to a ripe old age, they still will not have the biggest possible antlers or bodies unless you also pay close attention to nutrition.**

**For providing forage, landowners and hunters tend to focus on planting food plots and/or, where legal, providing supplemental feed. Yet no matter how effective such a program is, you still should provide abundant quality native forage as well.**

**Although a host of minerals and other nutrients are needed daily, the three primary “players” in deer nutrition are protein, calcium and phosphorus. A quality forage is one that provides these nutrients in high concentrations and at the same time is highly digestible. Many plants have mechanisms to prevent grazing or browsing or become less palatable as they mature.**

**As a plant puts on new growth, the first shoots are tender. Later, the plant replaces the highly digestible material with fibers such as cellulose, a primary constituent of wood.**

**When food is in short supply, forage plants have a hard time growing out of the reach of deer. However, if a plant can eventually get its “head” above this height, it can flourish. As a result, in many mismanaged woods there are tons of highly nutritious forage just inches out of reach for deer.**

**Our research, and that of other scientists, has shown that periodic fires can go a long way to solving this problem. Yes, some trees and brush are killed by the fire, but only the parts above ground level. By the next growing season, you will find lush, tender, nutritious green shoots growing from the bases of the plants.**

**If there are deer and/or elk in the area, you will quickly find evidence that they are utilizing this bonanza of forage. Removal of the canopy releases minerals, which then are carried into the ground by the next rainfall. Also, deer immediately move into recently burned areas to lick the ash.**

**Hopefully you now realize that fire is an important management tool. If so, it is time to move on to the three questions you now have in mind: (1) Where should I burn? (2) How often should I burn? (3) How do I do it?**

**Pines or other conifers usually make better burn areas than do stands of hardwoods. Openings and natural meadows also have good burning potential. As part of our initial evaluation of a property, we use an aerial photograph and a site visit to find such areas.**

**A potential burn area must be positioned so that the prescribed fire can be controlled. Again, a professional land manager can be of considerable help. We always lay out good firebreaks, or fire lanes, around our burn areas. Roads are excellent for this purpose, but if none are present, you can construct fire lanes with a small bulldozer. It generally costs about \$60 per hour for this work, and you can construct a lot of fire lane for a small amount of money. Some state forestry agencies even provide assistance in firebreak construction.**

**These breaks should be at least 25 feet wide. We like to plant ours in a cool-season crop, such as a mix of oats and clover, to provide added fire protection and enhance nutrition.**

**Also, a good burning area is not located adjacent to any potential hazard, such as a neighbor's property line, a building or other sensitive area. Nor should prescribed burning areas ever be positioned adjacent to heavily traveled roadways, as there is the ever-present danger of smoke blowing across the road and obscuring drivers' vision.**

### **HOW BIG AN AREA?**

This is a question nature never considers. Some natural fires back in the 1800s consumed millions of acres. In fact, we have talked with old-timers who remembered sitting on the porch as children, watching fires coming for two weeks before they arrived.

**Fortunately, today we seldom see wildfires anywhere near that size. Because the operative word in prescribed burning is "control," we usually limit our burn areas to 20 acres or less. Remember: You are trying to produce what amounts to natural food plots, so small areas work best.**

**A prescribed burn is one way to "landscape" your hunting area. Thus, you should lay out your burns to provide the maximum nutrition across the property. As we have often noted in this series, the basic management unit size for whitetails is 80 acres; thus, you should provide everything a deer needs (food, cover and water) within this minimum area if possible.**

**No more than 30 percent of the area needs to be cover, so you can utilize the remainder to provide various types of forage (natural and/or cultivated).**

### **WHEN TO BURN**

The timing of a prescribed burn is very important. Nature doesn't seem to care about the consequences of burning at the wrong time; as a result, most wildfires occur during a time of year we never would even attempt a prescribed burn! Perfect conditions for an out-of-control wildfire include high air temperature, high wind and low humidity. Obviously then, these are conditions to be avoided for planned burns.

**In most cases, a cool-season burn works best, for both safety and response of prime deer foods; thus, we limit most of our burning to late winter or early spring. But the exact timing depends on**

**geographic factors. Obviously, you cannot burn your woods when there is snow on the ground, so northern deer managers must wait until the snow melts.**

**In the South we can burn anytime in winter, but we prefer to wait until two or three weeks prior to spring green-up. At our research facilities in East Texas and West Georgia, that translates to a late-February burning window.**

### **HOW OFTEN TO BURN?**

The forage must answer this question. The optimum strategy is to keep forages below “deer height,” which is roughly four feet. Of course, how fast native vegetation reaches that height depends on many factors, including plant species, soil type and climate.

**Some areas can be burned annually. The area shown on pages 26-27 is an annual burn site on our East Texas research facility. However, even in this warm, wet region, we normally have to burn only every other year to keep the forage at “deer height.” In colder and/or drier climates, the interval can be as long as 10-15 years. Drought can lengthen the time between needed burns in any region.**

**The best approach is to assess forage areas each year. If vegetation has grown too tall, schedule a burn for the following cool season. At our facility in Texas, some areas have been prescribe-burned for more than 25 years now. Not coincidentally, these are the most popular foraging areas for deer.**

### **CONDUCTING A BURN**

Remember the worst conditions for burning listed above: high temperatures, high wind and low humidity? The first two in particular are real “no-no’s” when conducting a prescribed burn.

**If you limit your burns to the cool season, in most cases high temperatures are not an issue. On the other hand, high winds certainly can be. We recommend you burn only when wind velocities are less than 5 miles per hour. A north wind often is best for this purpose, and these are common in late winter.**

**In terms of danger, the humidity factor is not that critical during the cool season. We actually prefer lower humidity, so the fire will burn more quickly and evenly. Thus, the ideal burning day (and**

there are not many) is one with temperatures of 50° F or less, low wind and low humidity.

**A prescribed fire must be well planned; once you make the decision to start, it is hard to stop. So if there is any doubt about conditions being right, wait until another time.**

**To burn an area safely, you must have the proper people and equipment. We recommend the following equipment: several fire rakes, fire flappers, backpack sprayers and a tractor or bulldozer with a disc.**

**Starting a prescribed fire is not a matter of lighting a match. The fire is started using a fire drip torch. This unique device, filled with a special burning fluid, is designed to place a carefully positioned fire line along a predetermined line.**

### **FIRE TYPES**

There are two basic types of prescribed fires: back fires and head fires. Each has its place.

**A back fire is started in such a fashion that it burns “back” into the wind. Wildfire fighters often use these to produce a “black zone” ahead of an advancing fire to stop it. Head fires are designed to go with the wind; thus, they move considerably faster. The most common procedure is to lay down a back fire to produce a wide black zone upwind, then burn small strip head fires toward the black zone.**

**The goal of a prescribed fire is to kill back the understory vegetation, not burn down the woods. A slow-moving, “cool” fire will accomplish this. Occasionally, prescribed burners will use a hotter head fire to remove heavier growth, but the goal is still to reduce above-ground understory vegetation and reduce litter on the forest floor. Both are considered “fuels,” and reducing them decreases wildfire hazard.**

### **FORAGE RESULTS**

Managers often neglect one very important component of deer management: cost. You normally can figure on \$3 per acre for burning. Even if the cost turns out to be a bit higher, the resulting forage will be a bargain. It is not uncommon to have 3,000 pounds per acre of forage (depending on the amount of forest canopy) produced from a burn, and that is incredibly cheap deer food.

**The idea of setting fire to your woods might conjure up images of fire-blackened trees, but that never should be a concern. Yes, right after the burn the lower trunks will be blackened, but the first significant rain will clean the soot from them.**

**If you schedule your burn to take place just prior to spring green-up, you will see an immediate response. At our facility in Texas, forage begins to appear within a month after the burn. Because we also fertilize after the burn, lush growth results.**

### **CONCLUSION**

There is nothing prettier, in our opinion, than a prescribed-burn area after the first growing season. Nor is there anything more satisfying than watching a group of velvet-antlered bucks enjoy the nutritious forage resulting from such a fire. If your deer property has at least one area that is well suited to burning, perhaps it is time you gave this potential management tool a serious look.