

Burn to Better Browse

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“Man has come to the forest,” declared Bambi’s father as he smelled the smoke from the campfire that was to become a raging wildfire.

The vivid imagery of this Disney cartoon is the first exposure most children have to fire and wildlife. Smokey the Bear has done an excellent job of educating the public on the dangers of wildfire. Unfortunately, the same message has usually been applied to all fires, even those that reduce the chance of wildfire and play critical roles in natural ecosystem maintenance and function. While catastrophic wildfires negatively impact people and wildlife, prescribed fires are beneficial to deer and many other native plants and animals.

Prescribed burning is fire applied by trained people in a skillful manner under particular weather conditions in a definite, confined location to achieve specific results. When thoughtfully used, prescribed fire promotes quality deer browse and increases soft mast production.

WHY FIRE?

Fire has played a role in most North American ecosystems for thousands of years. Most parts of the United States have habitat types, which may be rare today, that require fire to maintain. Some of these habitats burned frequently, every one to three years, while other habitats burned once every decade or two. But in every case, when fire moved through these habitats, it pushed succession a little further back, temporarily shifted dominance to the plant species adapted to fire, and started a cycle of renewal that provided a diverse selection of seedlings and sprouts for all the herbivores. The mosaic that results after a series of fires produces a diversity of plants that provide forage, mast, and escape cover for deer throughout the year.

A quick review of the literature shows that prescribed fire has been intentionally used to improve habitat all across the range of white-tailed deer. Fires for deer are typically used to top-kill thick, invasive brush in favor of tender hardwood and forb sprouts. Prescribed fires may also be set to benefit other wildlife species, improve cattle range, restore native vegetation, reduce fuel loads, control unwanted competition in forests, and prepare areas for reforestation.

Prescribed fire is most frequently seen in the Southeast, though it is becoming more and more common in the Southwest, Midwest, and even the Northeast. The areas where fire is most frequently used are the open pinelands of the South and the prairies and savannas of the Midwest. Deteriorating aspen stands with low commercial value in the Midwest and Lake States may be enhanced by the deliberate use of fire. Fire is sometimes used to rejuvenate desirable browse plants in the West and Northwest. Prescribed fire is also used to rehabilitate some pine barrens and bog habitats, and to shift understory regeneration in low quality hardwood stands in the Northeast. Fire is used to maintain early successional components in old field habitats and as a site preparation tool prior to reforestation in many parts of the country.

Fire is not good or bad. It can improve or degrade the habitat for different animals and plants depending on how it is used. Some factors that determine the impact a fire has include the size of a burn, the reason for a burn, fuel loading, wind speed and direction, relative humidity, ignition pattern, and fire return

interval. These factors interact in a complex and dynamic fashion which results in a diverse mosaic of impacts as fire moves through an area.

Most animals, especially those that live in fire-type habitats, are adapted to fire and have ways of escaping. Deer simply move in front of the fire, wander between fingers of fire, and even hop casually over low-burning fires. Fresh deer sign is frequently seen when checking fires.

The major benefit of prescribed fire for deer is an increase in forage quantity and quality. Like most other disturbances, including mowing, plowing, and herbicide treatments, there is a short-term decrease in the amount of available browse, then a longer term increase in the amount of forage and mast within "deer reach" of the ground. Not only is the amount of forage greater, but the quality is higher.

The increased forage quality is partially the result of shifts from woody browse to good weeds, including many legumes, and tender woody sprouts. The younger plants have higher nutrient concentrations, particularly proteins and phosphorus. These tender sprouts are also more palatable and digestible because they do not have as much tough lignin and fiber as older plants.

Some studies and anecdotal observations suggest that many shrubby species produce an abundance of fruit following a fire, though there is a drop in mast production the year of the fire. Many of the dwarf oaks in the South and the Lake States, though different species, respond to fire by producing more acorns two to four years following a fire. Blackberries, blueberries, and many similar soft mast producers benefit from fire and produce more mast per acre two to five years after a fire.

A secondary benefit of fire for deer and other animals is a reduced ectoparasite population. Areas that are burned frequently have lower tick, chigger (redbug), and lice populations.

While prescribed fire alone is beneficial, it is often used with other habitat management techniques. It is frequently used after thinning fire-type pines. Where wildlife is an important objective, prescribed fire is often used after an understory is treated with herbicides to improve and extend the benefits of controlling the woody understory components. Herbicides, drum choppers, and heavy duty mower/mulchers may be used to reduce fuel loads prior to a burn. After a burn, an area may be planted with native plant or typical food plot seeds to help provide forage.

A general fire regime for deer in the Southeast is to use a cool-season fire (December to March) of variable intensity on a three to five year return interval in 25- to 200-acre blocks. Western and northern return intervals would typically be longer (five to 10 years), while the sizes of the burn units would usually increase to the west and decrease to the north. The season of burn would shift later as you move northwards. After an area has been burned once or twice, the season of burn can also be shifted up to six or more months later to widen the burning window. Small patches may also be burned (and even fertilized and broadcast planted) just before deer season to attract deer.

Fire is one of the cheapest treatments that is used to improve wildlife habitat. The benefits to deer following prescribed fire last from three to five years.

Man has indeed come to the forest and brought prescribed fire with him. This carefully applied tool has restored a natural disturbance to many ecosystems and improved the habitat for deer, rabbits, turkey, quail, some songbirds, and many native plant species. Blackened ash and the acrid scent of wood smoke are an assurance that tender greenery is soon to come.