LANDOWNERS FOR WILDLIFE

Landowners for Wildlife
Private Lands Program

Benefits of Prescribed Burning

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HISTORY OF FIRE

Fire has shaped Louisiana's landscape for thousands of years. Native Americans set fires to reduce "rough" vegetation, improve hunting areas and create space for crops. Many fires were started by lightning strikes during spring and fall dry seasons. Even during periods of summer rain, lightning ignited fires in grass, dry leaves and at the base of trees. Across much of Louisiana, these fires maintained coastal prairie, longleaf pine and shortleaf pine/oak/hickory ecosystems. Wildlife was nourished by the diversity of plants that flourished in areas that were frequently burned. The short intervals between fires prevented large accumulations of fuel. This reduced the occurrence of intense fires that could damage or kill large expanses of trees.

During much of the 20th century, fire suppression and prevention activities decreased the frequency of fires and the acreage they covered. This brought about changes in forest ecosystems. Understory brush became denser, live and dead vegetation accumulated, and invasive plants gained a foothold. These conditions led to less diverse plant communities, loss of forested grassland habitats, loss of prime habitat for many species of wildlife and more damaging wildfires.

Recognition of the benefits of fire and the changes in Louisiana's forests that have occurred in the absence of fire over the last 50 years have prompted renewed interest in the utilization of fire as a forest and wildlife management tool. Prescribed burning (the application of fire in a controlled manner) is an important component of prairie management and restoration, longleaf pine establishment and management, and wildlife habitat management in grassland and pine ecosystems. As beneficial as prescribed burning is, we must understand and adapt to the challenges associated with prescribed burning in the modern world.

Tractor standing by on fireline during site preparation burn.
Photo by James H. Miller, USDA Forest Service, *forestryimages.org*

April burn with spot fire technique.
Photo by David J. Moorhead, University of Georgia, *forestryimages.org*

REASONS WE BURN

Just as natural or human ignited fires in the past shaped the landscape, proper application of prescribed fire can be used today to achieve a variety of objectives.

Photo by Wayne Adkins, USDA Forest Service, *forestryimages.org*

Photo by Dale Wade, Rx Fire Doctor, *forestryimages.org*

Photo by William M. Ciesla, Forest Health Management International, *forestryimages.org*

REDUCTION OF FUELS

Arson, human carelessness and lightning will inevitably ignite wildfires. If fuel loads (dead vegetation, pine needles, brush) are high, these fires can develop into intense fires that damage forest resources and property. Regular prescribed burning removes accumulated fuels, thereby reducing the risk of intense wildfires. Prescribed burning is conducted when weather conditions favor a controllable fire. In contrast, wildfires usually occur when conditions favor rapid spread. Prescribed burning for fuel reduction may not significantly decrease the number of fires, but will reduce their severity. Prescribed burning must be repeated at regular intervals to maintain the protective effect of reduced fuels. In the long growing seasons of the south, it takes only four to five years for fuels to return to hazardous levels.

ALTERING VEGETATION COMMUNITIES

Although not readily apparent, plant communities are constantly changing. If left unchecked, a longleaf pine forest will eventually become a hardwood-dominated forest and a prairie will become a forest. Fire is the process that halts this change and maintains our native plant communities. It does so by impeding the growth of invading plants such as sweetgum or yaupon that are not adapted to fire and encouraging growth and development of those that are fire-adapted such as pines, grasses and many wildflowers.

Prescribed burning also changes the structure and density of existing vegetation. For example, a prescribed fire may reduce the density of young sweetgum trees in a pine stand. This increases the amount of sunlight that reaches the ground, encouraging growth of grasses and herbaceous vegetation.

IMPROVING WILDLIFE HABITAT

Prescribed burning is one of the best tools for improving wildlife habitat in grasslands and pine-dominated forests. Shrubs and herbaceous plants experience a flush a new growth following a fire. This new growth is more nutrious and platable to grazing and browsing wildlife than the “rough” vegetation that occurred before the burn. Many of the beneficial insects consumed by birds are more abundant following a fire. Fires promote flowers, seeds and fruit production which increases food for wildlife. Vegetative structure is an overlooked, but important component of habitat for wildlife and can be enhanced by prescribed burning. For many species of wildlife, periodic prescribed fire is crucial to their maintenance of their habitat.

FOREST HEALTH & MANGEMENT

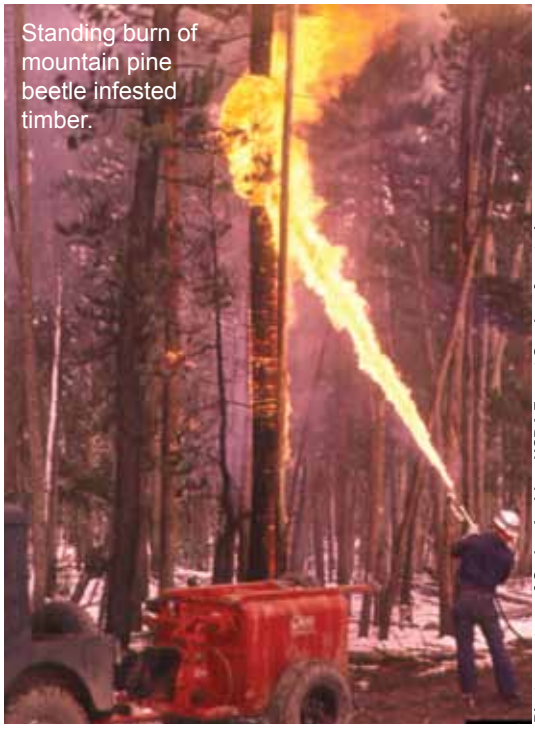
Prescribed burning can be used for a variety of purposes in the management of forests. Prescribed burning is commonly used to control a fungal disease called brownspot disease that sometimes occurs in longleaf pine seedlings. It may also contribute to control of root rot fungus. In harvested stands, prescribed burning can be used to prepare sites for reforestation and/or removal of logging debris. Prescribed fire can be used to control hardwoods and invasive exotics in pine stands.

IMPORTANT CONSIDERATIONS

Prescribed burning has many benefits and is a very important tool for land managers, however, it must be used carefully. Experienced practitioners of prescribed burning consider a wide variety of factors in order to safely conduct a prescribed burn. Some of those considerations include fuel load, fuel moisture, wind speed and direction, relative humidity, temperature, smoke dispersal in the atmosphere, and the location of the property relative to sensitive areas such as roads, schools, hospitals, etc. There are some tracts of land that by nature of their location are poorly suited to prescribed burning. For such sites, alternative methods of vegetative manipulation such as selective herbicides or mechanical methods should be utilized.

For those sites where prescribed burning can be safely used, landowners should consider how prescribed burning will help them meet their management objectives and develop a plan that will enable them to effectively use this tool. Landowners should consider the following in their plan:

1. **Establishment of fire breaks** - Firebreaks can be plowed as needed, but many landowners should consider permanent fire breaks that can be planted with a cover crop that will serve as a food plot and reduce soil erosion.
2. **Burning rotation** - For most landowners in Louisiana, prescribed burning should be conducted on a two to three year rotation. There are some situations where annual burning is warranted and others where longer rotations are needed.
3. **Size of burn units** - Landowners should usually avoid burning their entire acreage in the same year. Burning a portion of the property every year will create a patchwork of cover types and provide better habitat for wildlife.
4. **Timing of burns** - Traditionally, prescribed burning was conducted during the late winter. However, burning can be conducted nearly year-round. Results from burns vary according to time of year, for instance February burns will impact vegetation differently than a May burn.
5. **Impacts on timber resources** - While pines are fire resistant, some are less resistant than others. Longleaf pine is the most fire resistant and can be burned within a couple of years of establishment. On the other hand, loblolly and slash pine should not be burned until they are 10-12 years old.
6. **Fuel accumulation** - Land that has not been burned in several years may have a high accumulation of fuel. These sites can and should be burned to reduce the risk of wildfire, but extreme care should be exercised. High accumulations of fuel can not only make the fire difficult to control, but can cause damage to valuable trees if proper precautions are not taken.



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Turkeys nest on the ground, and can be affected by burning.
Photo by Linda Haugen, USDA Forest Service, *forestryimages.org*

Prescribed burns can be conducted in late fall, winter and early spring. Consult with state and local agencies concerning permits and restrictions before starting a fire.

Pictured right: Regrowth following a late winter (February) burn.
Photo by David J. Moorhead, University of Georgia, *forestryimages.org*

Using a drip torch to initiate a backburn in a prescribed fire.
Photos by David Cappaert, Michigan State University, forestryimages.org

CONCLUSION

Because of Louisiana's fertile soils and long growing season, it is necessary to regularly manage vegetation to maintain native ecosystems, manage wildlife habitat, reduce the threat of wildfire and to meet other management objectives. Strategies for effective vegetation management may include fire, chemical, mechanical or grazing techniques. Each method has benefits and limitations. Carefully applied prescribed burning is a cost-effective method to fulfill a variety of landowner objectives. When burning conditions and risk are appropriate, it is often the preferred strategy for landowners interested in native habitat, forest, and wildlife management.

Prescribed burning is a valuable and effective tool for landowners and managers. However, there are risks associated with use of fire, so burning should only be conducted by experienced persons in accordance with rules and established standards. Landowners and managers lacking experience with prescribed burning should contact a consultant forester, the Louisiana Office of Forestry, or the Louisiana Department of Wildlife and Fisheries for more information. The Louisiana Department of Wildlife and Fisheries' Landowners for Wildlife Program offers free technical guidance to landowners and managers who wish to improve wildlife habitat. For information regarding prescribed burning, including the development of a management plan that incorporates prescribed burning, contact one of the department's field offices listed below.

Prescribed surface fire burning at night, showing short flame lengths and progressive-strip ignition pattern.

Photo by Dave Powell, USDA Forest Service, *forestryimages.org*

produced by:
Louisiana Department of Wildlife & Fisheries
Wildlife Division - Private Lands Program

sponsored by:
Louisiana Forest Stewardship Program

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