



TEXAS A&M FOREST SERVICE

Timber Management: Prescribed Burning for Woody Control

Fire has shaped the environment of Texas for thousands of years, and in many cases, wildlife have adapted to habitat conditions created by fire. With the help of Native American Texas Indians, it is estimated that some of the East Texas pine forests used to burn every two to three years. However, it is now often the case that land in East Texas has gone without such fire for decades. Careful introduction and management of fire by way of prescribed burning can benefit the land. It is likely that prescribed burning can help landowners accomplish many of the objectives they have set for their land.

Prescribed burning has the ability to encourage pine and reduce hardwoods and shrubs in East Texas uplands bringing both an individual stand and ecosystem back to historic and pre-historic conditions. This has been shown to benefit many game, non-game and rare animal species. However, the benefit to landowners can be better long-term economic return, increased opportunities for recreation, better aesthetics, and reduced risk from uncontrolled wildfire.



Benefits:

- Controls low quality hardwoods and shrubs that compete with pines.
- Prepares sites for future tree planting or natural regeneration.
- Increases sunlight to forest floor, producing more grass, flowering annuals plants and seeds for wildlife.
- Reduces risks of annosus root rot and brown spot needle disease.
- Improves visibility and access for marking and harvesting timber.
- Most nutrients are returned to the soil in a more readily available form for plants.
- Increases edge effects many species use when seeking travel routes, feeding spots or shelter.
- Improves visibility and access for forest recreation.
- May be used in combination with chemical or mechanical treatments to often enhance the results.

Cost:

Because prescribed fire works in harmony with nature, achieving desired results with prescribed burning is often less expensive and produces less undesirable effects than alternative methods such as chemical treatments or mechanical clearing. However, prescribed fire is a tool that can be used in combination with chemical or mechanical treatments to often enhance the results. Land that has gone without fire for some time may initially require a combination of treatments to prepare the land for periodic burning.

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Considerations:

In understory burning, fire intensity must be carefully controlled. It must be adequate to consume unwanted dead brush and litter, and to either kill or to only renew the understory vegetation, depending upon the objective, while not intense enough to kill or damage the overstory pines. Although southern yellow pines have thick bark with good insulating qualities, the roots and the growing tips of the pines are always vulnerable to hot fire. Low to moderate flame heights and a steady wind within the stand are often desired to keep heat from rising into the crowns. Cooler temperatures also allow more heat to be generated at flame level before killing temperatures are reached in the tree canopy. Generally, needle scorch up to one-third of the crown will cause little damage or loss of growth. Adequate moisture in the uppermost layer of soil is also needed to prevent fire from roasting the fine roots, which feed and support the trees. This moisture is critical in previously unburned stands as the fine roots may have grown up into the above-ground pine litter.

In controlling fire intensity, fuel loading, fuel moisture, temperature, relative humidity, wind, and burning technique must all be considered. Various burning techniques are used to get the fire intensity needed in a particular stand with the weather conditions existing that day.

Dormant season burns every 2-3 years will reduce fuel loading and top-kill woody brush. The basal and root sprouting that will occur from the top-killed woody vegetation will likely produce browse that is more palatable and attainable to wildlife than was present before the burn. Dormant season burns are typically done from December through February.

Growing season (spring) burns will greatly reduce the number of woody stems that regenerate and will promote more native grasses in the understory. Burning during this time can, however, temporarily interrupt nesting and feeding areas for game birds if conducted over a very large area. Growing season burns can be successfully done if the canopy is fairly open, if the fuel load is not heavy, and if the vegetation is not too green or spotty to carry a fire. It is typically necessary to conduct multiple dormant season burns over several years to prepare a site for a growing season burn. Growing season burns may be done in May and early June if the weather conditions are appropriate and if there is not heavy fuel loading. With warmer temperatures and usually drier weather, growing season burning

requires extra precaution. Growing season burns are often done on a three to five year cycle or as needed.



Precautions:

Prescribed burning should always be done by a certified burn vendor. An acceptable burning plan should first be formulated with appropriate documentation prior to conducting the burn. This plan should detail all information regarding the planned prescribed fire and should be followed as closely as possible. Fuel dryness, wind speed and direction, humidity, topography, fuels, and smoke management all play a part in conducting a safe and successful burn. Tree mortality and wildfire escape can occur in cases of high fire intensity.

Before a prescribed burn is conducted, neighbors, the local fire department and the Texas A&M Forest Service should be informed. The Texas A&M Forest Service will need to know the type burn (fuel reduction), location, number of acres, landowner name, person responsible (person conducting the burn), and a telephone number. Weather conditions and fire forecast information may be obtained from Texas A&M Forest Service Dispatch Offices.