

Prescribed burning is fire applied in a skillful manner under exacting conditions to a specific area for a definite forest management objective.

The southern yellow pines are so-called fire climax species. This means that historically, vast pine stands were established naturally in the south because of their relative resistance to damage by fire, compared with hardwood species.



Prescribed burning is a way to mimic the natural order of perpetual pine stands on southern uplands. In addition to the economic value of these stands, the associated natural wildlife habitat is also mimicked by the skillful use of fire. The carrying capacity is enhanced for those game species that normally inhabit the southern woodlands. Furthermore, habitat critical for certain endangered or threatened plant and animal species that historically occupied the southern uplands can only be preserved by the skillful use of fire.

**BENEFITS:** Prescribed burning provides multiple benefits:

- Eliminates wildfire fuels such as leaves, branches and herbaceous vegetation.
- Controls low quality hardwoods and shrubs that compete with pines.
- Prepares sites for tree planting.
- Increases sunlight to forest floor, producing more grass, fruits and seeds for wildlife.
- Reduces risks of annosus root rot and brown spot disease.
- Improves visibility for harvesting and marking timber.
- Increases growth of many flowering annuals and other plants.
- Increases presence of many fire dependent species including the gopher tortoise, indigo snake and red-cockaded woodpecker.
- Increases edge effects many species use when seeking travel routes, feeding spots or shelter.
- Improves visibility and access for forest recreation.
- Less expensive and produces less undesirable effects than alternative methods.
- May be used in combination with chemical or mechanical treatments to often enhance the results.

**TYPES OF BURNS:** Winter is the best time of year to burn for fuel reduction, disease control, forage improvement, aesthetics and access. When burning for hardwood control, burn during the growing season. When burning for site preparation, burn in the summer or early fall.

**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.

**PRECAUTIONS:** In turn, prescribed fire is limited in its use to certain areas and only on certain days. Smoke can also be a problem. Prescribed burning is a complex tool that takes planning, advance preparation and skillful use by experienced and knowledgeable people. General guidelines cannot be safely used. Each area has to be prescribed and treated separately.

**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.

In controlling fire intensity, fuel loading, fuel moisture, temperature, relative humidity, wind, and burning technique must all be considered together. Various burning techniques are used to get the intensity fire needed in a particular stand with the weather conditions existing that day. Backing fire (backing into wind) is the easiest and safest to use but takes longer and therefore, more costly. It is used with heavy fuel loading, young stands or for the initial burn. Spot fires are more intense, and strip-head fires are the most intense. They can only be used in stands of large trees and light loading of fuel or periodic burns of every one to three years.

**ALABAMA CERTIFIED BURN PRESCRIPTIONIST:** Prescribed burning is a complex management tool. It is recommended that only a certified burn prescriptionist licensed by the State of Alabama be used. Contact the Alabama Forestry Commission county office for assistance. Information on prescribed burning and charges for burning conducted by the AFC is also available at [www.forestry.state.al.us](http://www.forestry.state.al.us).

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