

# PRESCRIBED BURNING

S. C. Practice Job Sheet 338

Prepared for: \_\_\_\_\_

Prepared by: \_\_\_\_\_

Farm: \_\_\_\_\_ Tract: \_\_\_\_\_ Date: \_\_\_\_\_

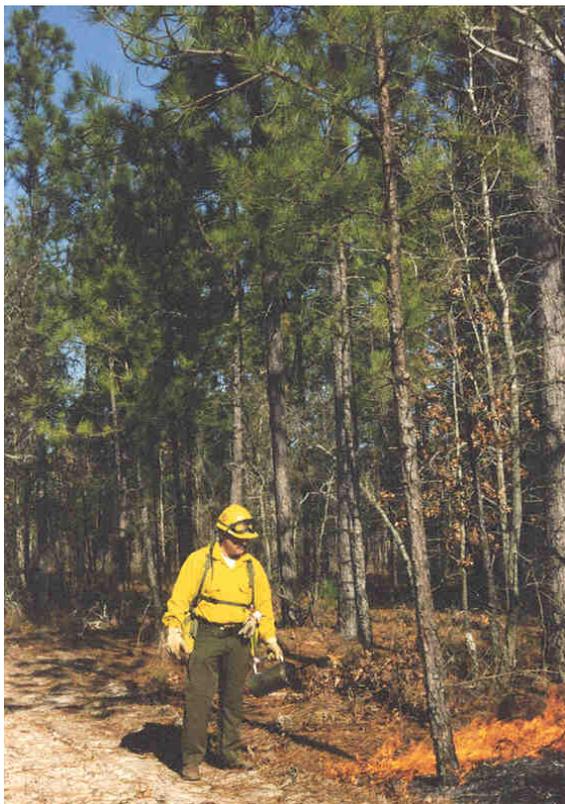


PHOTO BY US FISH AND WILDLIFE SERVICE  
Prescribed burning reduces wildfire hazard and improves wildlife habitat.

## DEFINITION

Applying controlled fire to a predetermined area.

## PURPOSES

- Control undesirable vegetation.
- Prepare sites for harvesting, planting or seeding.
- Control plant disease.
- Reduce wildfire hazard.
- Improve wildlife habitat.

- Improve plant production quantity and/or quality.
- Remove slash and debris.
- Enhance seed and seedling production.
- Facilitate distribution of grazing and browsing animals.
- Restore and maintain native plant communities.

## CRITERIA

Apply this practice to areas designated in the conservation plan.

Procedures, equipment, and the number of trained personnel should be adequate to safely accomplish the burn. The timing of the burn must be based on relative humidity, wind conditions, air temperature, and fuel conditions.

The expected weather conditions, the potential impact of heat and smoke on traffic, property, safety, and health must be integrated into the decision to burn.

Timing of burning should be commensurate with soil and site conditions to maintain soil properties (structure, soil moisture) and site productivity and to minimize soil erosion.

Comply with applicable federal, state and local laws and regulations during implementation of this practice, including South Carolina's Smoke Management Guidelines.

**When Prescribed burning, one must:**

1. Have a written prescribed fire plan for each forest, wildlife, and agricultural area to be burned (except for crop stubble and grass fields).
2. Have on site the prescribed fire plan during the burn and adhere to the plan.
3. Comply with the Notification/Precautions Law; Title 48, Chapter 35 of the 1976 Code of Laws as amended.
4. Notify the South Carolina Forestry Commission on the day of the burn with the necessary information required by the Smoke Management Guidelines.

Those who have successfully completed the South Carolina Certified Prescribed Fire Manager (CPFM) course and have conducted a prescribed burn pursuant to the SC Prescribed Fire Act requirements (Title 48, Chapter 34), are not liable for damage, injury or loss caused by fire, resulting smoke, or other consequences of the prescribed fire unless negligence is proven.

Adjoining landowners, local fire departments, and public safety officials must be notified prior to burning.

Safety precautions are to be planned before the burn and monitored during the burn.

- **Fuel Condition** - Burn when fine fuel moisture is from 10 to 20 percent. Burning when the fine-fuel moisture is below 6 or 7 percent can result in damage to plant roots and the soil. When fine-fuel moisture approaches 30 percent, fires tend to burn slowly and irregularly, often resulting in incomplete burns. Debris from harvested areas should be burned when fuels are dry,

provided soil moisture does not get too low.

- **Suitable Soils, Slopes, and Soil Moisture Conditions** - Sites with mineral soils can be burned so long as there is adequate soil moisture (Damp soil protects tree roots and microorganisms). Slopes up to 25 percent can be burned with minimum danger of soil movement. Slopes greater than 25% can be burned for site preparation if a high-moisture burn is used. Prescribed burning should not be conducted on organic soils. Burning should not be conducted on severely eroded forest soils where the average litter layer is less than one-half inch deep. Water bars should be constructed in firebreak lines to keep surface runoff from entering directly into streams.
- **Humidity, Temperature, and Wind Conditions** - Preferred relative humidity is 30 to 55 percent. Burning at relative humidities below 30 percent is dangerous; burning at humidities above 60 percent may not burn hot enough. The preferred temperature for winter burning is below 60 degrees F. When the objective is to control undesirable species, growing season burns with air temperatures above 80 degrees F. are recommended. The preferred range in windspeed in the stand is 1 to 3 mph (measured at eye level). Windspeed readings for most fire-weather forecasts are taken 20 feet above ground at open locations. The minimum 20-foot windspeed for burning is about 6 mph and the maximum is about 20 mph.
- **Time of Day** – Prescribed fires are limited by the category day which is related to smoke dispersal. No burning is allowed on a Category 1 day. A Category 2 day allows daytime burning only, between 9

am and 4 pm EST. The fire should be appreciably burned out by the end of this time frame, with smoke production substantially ended. For a Category 3, if forecasted nighttime dispersion is poor or very poor, only daytime burning will be permitted between 9 am and 5 pm EST. If forecasted nighttime dispersion is fair to excellent, then daytime burning and nighttime burning are permissible. Category 4 and 5 days allow daytime burning (all hours) and nighttime burning is permissible with forecasted fair to excellent nighttime dispersion. Smoke management guidelines must be followed in any case.

- **Precautionary Measures** - Smoke should be kept away from smoke-sensitive areas such as public roads, airports, and populated areas. Avoid smoke where poison ivy is burned. A proper burning plan considers all aspects of smoke management. All burning should be done in accordance with applicable smoke management guidelines and regulations.

**Preparing Sites for Seeding or Planting** - High-moisture burns should be used to prevent destruction of organic duff, conserve moisture, and prevent erosion. High-moisture burns may be conducted 2 to 3 days after summer showers.

Burning should be done August - September during a good seed year. Burning for several successive years prior to harvest cutting may be necessary. Longleaf pine regenerates best on a light litter cover, so burning up to a year in advance is desirable. Loblolly pine does not need litter cover; so burning just prior to seed fall is satisfactory. Longleaf pine should be burned in the spring of the year in which seeding is expected.

For prescribed burns on planting sites, a hot fire is usually required. Late summer and fall burning is usually prescribed to reduce understory and debris so personnel and machinery can travel safely.

**Improving Wildlife Habitat** - Prescriptions should recognize the biological requirements (such as protecting nesting and den trees) of the preferred wildlife species. Generally, the best season to burn for wildlife benefits is late February or early March. Later burns may be needed for certain habitats or objectives. Frequency of burning varies, but usually is required about once every 3 years. The area burned should consist of approximately one-third of the managed area. For deer and quail, strips or blocks within the burned area should be left unburned to increase the "edge" effect.

**Controlling Undesirable Vegetation** - A winter burn results in less root kill than spring and summer burns, but resprouting is easily controlled by repeating burning while diameters are small. For this reason, burning may be required for several consecutive years.

**Controlling Plant Disease** - Burning to control brownspot disease in longleaf pine is recommended when more than 20 percent of the seedlings are infected. Longleaf seedlings are susceptible to brown spot until they reach a height of 3 feet. This condition can be controlled with a fire during the dormant season (December - February). Seedlings should be in the "grass" stage and at least 2 years of age or older. If reinfection occurs, additional burns may be needed.

**Restoring Native Plant Communities** - Prescriptions should recognize the fire tolerance of desirable and undesirable plants. Timing of the burn should be correlated with stages

of plant growth. Frequency of burning should be adequate to accomplish the desired plant responses.

**SPECIFICATIONS:** (Must be completed by conservation planner).

Obtain a written burn plan prepared by a certified prescribed fire manager.

Have a written burn plan on site at the time of the burn.

Burn to be conducted under supervision of: (check one)

\_\_\_\_\_ Certified prescribed fire manager.

\_\_\_\_\_ Landowner following the burn plan.

Forest type to be burned:

\_\_\_\_\_

Season of year to burn: \_\_\_\_\_

Other: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## OPERATION AND MAINTENANCE

The kinds and expected variability of site factors (e.g., fuel condition and moisture content, weather conditions), traffic that may be impeded by heat or smoke, and safety and health precautions must be monitored during the operation of this practice. Sufficient fire suppression equipment and personnel shall be available commensurate with the expected behavior of these factors during the time of burning to prevent a wildfire and minimize the risk of accidents.

Provide fire suppression equipment during the burn.

Monitor site factors during the burn.

Monitor the burned site and adjacent areas until ash, debris and other consumed material is at pre-burn temperatures

**This job sheet was prepared in cooperation with local Soil and Water Conservation Districts and the South Carolina Forestry Commission.**

The United States Department of Agriculture (USDA) prohibits discrimination in its programs on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, and marital or familial status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint, write the Secretary of Agriculture, U.S. Department of Agriculture, Washington, DC 20250, or call 1-800-245-6340 (voice) or (202) 720-1127 (TDD). USDA is an equal employment opportunity employer. To file a complaint of discrimination write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice or TDD). USDA is an equal opportunity provider and employer.