

## Purpose:

The purpose of these forest practices is improving the overall health of the forest and reducing the wildfire hazard. Forest become high risk to wildfire damage due to numerous reasons such as over stocking, storm damage, heavy fuel buildup from lack of prescribed fire, insect and disease epidemics, and close proximity to high risk areas like railroad tracks.

The purpose of this job sheet is to assist with the implementation of management practices that will reduce hazardous fuel buildup and lower the risk of wildfires.

The wildfire risk is reduced when:

1. The amount of fuel is lowered using a prescribed burn.
2. Heavy buildups of woody debris is removed or treated (treatments include chipping, mulching, disking, burning, chopping, crushing, or hauling off).
3. Fuel is removed in a strip using a pushed or disked firebreak.
4. Fuel is reduced in a strip using a mechanical mulcher or other type of machine.
5. Fuel load is reduced by clearing & constructing a 30 foot vegetated firebreak (50 foot minimum in Pearl River, Stone, George, Hancock, Harrison and Jackson counties.)

## Eligible Cost Share Practices

The following practices will be cost shared under forest stand improvement and must comply with existing conservation practice standards:

## Firebreaks (394)

A firebreak is a strip of bare land or vegetation that slows down or stops a wildfire. The purpose is to protect soil, water, and plant resources by reducing or preventing damage from wildfires. The practice applies on areas where damaging wildfires are likely or where fire may be prescribed as a cultural or protective measure. The NRCS Field Office Technical Guide (FOTG) standard and specifications and planning considerations for Firebreaks (394) will be used. Components eligible for cost-share:

1. Disking
2. Pushing with Dozer Blade
3. Bush Hogging
4. Water Bars
5. Planting Vegetation

## Prescribed Burning (338)

Prescribed burning is the deliberate use of fire in a predetermined area under conditions that the intensity and spread of the fire are controlled to help manage a forest. The purpose is to control undesirable vegetation, prepare sites for planting or seeding, reduce fire hazard, improve wildlife habitat, and improve forage production and quality. It is a complex tool and should be used by only those who are trained and experienced in its use. Mississippi policies and guidelines:

1. Prescribed Burning must be done in compliance with the Mississippi Prescribed Burning Act.
2. A Mississippi Certified Prescribed Burner is the only person authorized to burn under this program.
3. A prescribed burning plan must be completed by a certified burner prior to the burn.

4. A burning permit issued by the Mississippi Forestry Commission must be obtained prior to the burn.
5. The NRCS Field Office Technical Guide (FOTG) standard and specifications and planning considerations for Prescribed Burning (338) will be used.



### Forest Stand Improvement (666)

Forest Stand Improvement is utilized to improve forest stand health, improve or sustain timber production, and improve wildlife habitat, recreation, aesthetics, and hydrologic conditions. This practice is used on forest land where stand manipulation is required to bring the stand back into production. The NRCS Field Office Technical Guide (FOTG) standard and specifications and planning considerations for Forest Stand Improvement (666) will be used. Components eligible for cost-share:

1. Chipping
2. Cutting
3. Thinning
4. Stream Crossing
5. Chopping
6. Crushing
7. Mulching
8. Shearing
9. Piling
10. Root Raking
11. Skidding

### Methods for Treating Heavy Fuel Loads

When large amounts of leaning or downed timber are present, prescribed burning may be too hazardous to the residual trees. The best alternative is to have the timber salvaged if possible. In the event the timber/material is not salvageable, the following treatment methods are recommended. Remember, the idea is to lower the fuel load and, thus, lower the wildfire risk, not to create a park-like setting.

### Mulching

Wildfires in the western United States and Florida over the last several years have highlighted the vulnerability of dense overstocked stands to fire. Mechanical reduction of understory and midstory fuels by mulching or chipping is an option for reducing stand density to allow the reintroduction of prescribed fire into forest stands. Mulching can be used to reduce fuel loading on areas that can not be prescribed burned.



### Shearing and Piling

Shearing is used to fell vegetation where the vegetation is generally large (6 inches or more dbh). Shearing is done with shearing blades that are either angled or V-shaped. Blades with serrated edges have the best cutting action. The blade should be kept out of the soil to minimize soil disturbance.



### Root Raking

Root raking usually follows shearing and is used to push the felled vegetation and other debris into windrows. Windrows should be placed on the contour at intervals of 100 to 300 feet depending on the slope and erodibility of the soil.



### Chainsaw Felling

On a small scale, a landowner may choose to fell leaning trees and tops to bring them in contact with the ground. This will increase the rate of decay and the amount of material consumed in a prescribed burn.



### Skidding

A rubber-tired skidder can effectively drag woody debris to a central location for burning. In order to grind smaller tops and debris into the top soil, the skidder operator should use multiple haul routes to increase the amount of tops and debris crushed by the skidder. In the southern pine region of the United States, activity by insects and fungi is at a high level because of higher humidity and temperatures. Consequently, logging slash crushed by the skidder decays rapidly and ceases to be a wildfire hazard.

### Drum Chopping

Chopping is accomplished by the use of a heavy track vehicle pulling one or two large metal cylinders (drums) with longitudinal cutting blades. One or two drums can be pulled behind a dozer to knock down, run over, & break down trees and other vegetation. Most material is concentrated near the soil surface, facilitating burning and decomposition of organic matter. Chopping is a cheaper alternative to heavier mechanical operations such as shearing and raking. A prescribed burn at least 60 days following this operation is typically conducted.



## **Benefits**

### **Hazard Reduction**

Prescribed burning helps to eliminate fuels such as pine needles, hardwood leaves, fallen branches, and herbaceous vegetation that accumulate on the forest floor. These fuels increase the chance of destruction of young stands if a wildfire erupts.

### **Control of Understory Vegetation**

Prescribed burning helps control low-quality hardwoods and shrubs. Understory vegetation competes with pines for moisture and nutrients, and may interfere with regeneration.

### **Site Preparation**

Pines require a clean and open seedbed to regenerate. Prescribed fire helps prepare sites by exposing the mineral soil and controlling undesirable vegetation for natural regeneration and direct seeding.

### **Wildlife Habitat**

Burning helps increase the yield of herbs, legumes, and hardwood sprouts beneficial to wildlife. Wildlife areas are also opened up, encouraging feeding, travel, and dusting. This increases the “edge” effect that wildlife like. Quail, turkey, deer, and dove benefit the most from prescribed burning.

### **Disease Control**

Longleaf seedlings are severely weakened and sometimes killed by brown spot disease. This is a disease that prolongs the grass stage, reducing height growth. Prescribed burning scorches the needles and kills the fungus without killing the seedlings. Annosus root rot infestations are also reduced by prescribed burning.

## **Improved Access and Aesthetics**

Reducing the amount of understory prior to harvest improves visibility and makes timber marking and cutting easier. Prescribed burning helps control the understory, improving accessibility for hunters or other recreational purposes. A wide variety of plants, including many flowering annuals, will increase in number.

### **Fire-dependent Species**

Some species of animals and plants are dependent on fires. These species include the gopher tortoise, indigo snake, red-cocked woodpecker, wire grass, and pitcher plants. When an area is burned regularly, these species may increase in numbers.

### **Preparation for Burns**

1. Prescribed Burning must be done in compliance with the Mississippi Prescribed Burning Act.
2. Prescribed Burning must comply with practice standard Prescribed Burning (338).
3. A Mississippi Certified Prescribed Burner is the only person qualified to burn in Mississippi.
4. Obtain a permit to burn from the Mississippi Forestry Commission.
5. Get a two-day weather forecast from the U.S. Weather Service.
6. Prepare necessary firebreaks in accordance with practice standard Firebreaks (394).
7. Have on hand the help, tools, and equipment needed to keep fires under control.
8. Thoroughly inspect fuel (burnable vegetation) conditions.
9. Prior to burning, notify adjacent landowner(s) of your intent to burn.

## **Optimal Weather Conditions**

In most cases, the surface fuels should be dry and the soil should be moist to help protect roots. Therefore, it is a good idea to burn one to three days after a good rainfall (1/2 to 1 inch). Damage is caused to trees when the fuel is too dry. The humidity level should be between 30 and 55 percent.

When the humidity is above 60 percent, the fire may not get hot enough or may not burn the area completely.

The air temperature should range from 20 to 50 degrees F in the winter and 80 to 95 degrees F in the summer. A moderate, steady wind from the north or northwest is best. This usually happens after a cold front has passed through.

Easterly winds are not recommended because they are often erratic. The preferred wind speed is 1 to 3 miles per hour (within the stand) and 6 to 15 miles per hour in the open.

## **Safety**

Safety precautions must always be used when performing a prescribed burn. You must also have an experienced crew leader, an adequate number of people to conduct the burn, and the correct tools and equipment. There is potential liability and the loss of human life and property if burning is not conducted properly. You must follow all applicable laws.

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