

Site preparation is utilized to prepare a field for planting. The practice is used on lands where woody plant establishment is desired. Site preparation can be expensive and care should be taken to select a method that will adequately prepare the site for tree planting. Several methods of site preparation are employed by land managers. These different methods are detailed below:

Chemical Site Preparation

Herbicide applications are used to treat unwanted vegetation that would compete with young trees for available water and soil nutrients. Herbicide applications can minimize soil disturbance, target individual species, and be used on small areas. Different kinds of vegetation require different herbicide treatments. The types of herbicides to use are site specific based on species to be controlled, soils, proximity to streams and sensitivity of adjacent vegetation. Herbicide applications have several advantages over mechanical site preparation such as minimal site disturbance, more cost effective on small acreage, and can be used on severely sloping land with severe equipment limitations. **Always read and follow all label directions.**

Broadcast and banded herbicide applications should be considered when ground cover vegetation exceeds 60% and/or hardwood sprouts is greater than 100 trees per acre. Foliar herbicides can be applied by air using airplanes or helicopters and by using sprayers attached to skidders, tractors, ATVs, and other ground equipment. The potential for spray drift onto untargeted or sensitive areas should be considered during practice planning. Foliar spraying is usually done in the summer and fall. Foliar spraying is often followed by a prescribed burn 6 to 8 weeks later.

Spot treatments can be used to treat small areas that do not require broadcast treatments.

Some herbicides are applied to the soil by broadcasting, using a grid pattern, or treating individual stems. Soil active chemicals can be in granular or liquid form. They can be useful for treating small areas with spot guns or similar equipment. The application needs to be made in the late spring to take advantage of the water uptake by the plants.

Tree injection or hack and squirt can be used to treat individual trees. The herbicide is applied through a cut in the tree bark. Basal bark sprays can also be used on young trees with thin bark. This treatment can be used all year, but is most effective during the growing season.

Mechanical Site Preparation

Mechanical site preparation involves using machinery to clear unwanted vegetation, logging debris, and prepare an adequate seedbed. Sometimes this method is used in conjunction with herbicides and prescribed burning to adequately prepare the site for planting.

Ripping (or Subsoiling) is necessary when a restrictive layer or hard pan exists within the top 24 inches of the soil. It is usually necessary to rip old agricultural fields and old pastures before planting these sites. The subsoiling depth should be 12-18 inches. Ripping can be conducted between August 1 and December 1 when the soil is dry and soil moisture content less than 30% of field capacity at the maximum ripping depth. If ripping occurs between November 1 and December 1, a minimum of 30 days with ample rainfall will be required prior to planting.

Bedding can be used in conjunction with ripping to improve soil tilth, improve seedbed preparation, and to allow rapid root penetration and development. These beds should not exceed 1 foot in height and 3 feet in width. On frequently flooded sites, beds up to 3 feet high could be used to assure seedling survival.

Disking can also be used to eliminate unwanted vegetation (particularly grass and weeds) from the site prior to planting. Disking will be completed prior to tree planting and will avoid wildlife nesting periods (April 15 – July 1). Strip disking, producing a tilled strip 3 feet wide centered on the rip, can be utilized in some fields. If cropland is being planted, consider a post planting herbicide application for weed competition.

Mowing can be used to provide access for tree planters. Mowing will be completed prior to tree planting and will avoid wildlife nesting periods (April 15 – July1). Mowing for site preparation should be done in late summer and fall.

Mulching can be used to shred logging debris and residual vegetation within a strip along the tree planting row. Limbs, tree tops, bushes, and trees can all be mulched for site preparation. A mulching machine does not disturb the soil on the site. Mechanical mulching works very well in small pre-commercial pine stands when a pre-commercial thinning is required.

A drum chopper can be used to run over logging debris to prepare a site for tree planting. The drum chopper crushes the woody vegetation and cuts it into smaller pieces. Drum chopping minimizes soil loss and may be used on soils that have a moderate to severe erosion hazard. This method is used in the summer and in conjunction with a prescribed burn in 4 to 6 weeks.

Shearing is usually done when the vegetation to be removed is larger than 6 inches in diameter. The blade on the shear should be kept out of the soil to minimize soil disturbance. A large V-blade or KG-blade can be used to remove logging debris and residual vegetation from the site. If the removed vegetation is windrowed, it will be necessary to provide lanes for tree planters and wildlife corridors through the windrows. Care must be taken to avoid pushing any dirt into the windrow (keep the blade above the soil) and all windrows will be placed on the contour.

Mechanical site preparation may adversely impact cultural resources and should be submitted to the Cultural Resource Specialist for a determination of impacts before the practices commences.

Prescribed Burning

Prescribed burning is utilized to facilitate tree planter access and reduce wildfire fuel load. Prescribed burning is the least expensive site preparation method and can be used in conjunction with other site preparation methods.

For natural regeneration, a stand will need to be prescribed burned several times over a period of years to control undesirable vegetation. When a good seed crop is projected, the stand should be prescribed burned prior to seed fall to prepare the seedbed.

A **Mississippi** Certified Prescribed Burner must conduct the burn if cost share money is involved. The Mississippi Certified Prescribed Burner must prepare a Prescribed Burning Plan and have it notarized. A burning permit from the Mississippi Forestry Commission must be obtained prior to burning and all applicable laws must be followed. The landowner must be given a copy of the Mississippi Prescribed Burning Act. The landowner must sign the Mississippi prescribed burning document certifying that he or she has received a copy of the Mississippi Prescribed Burning Act.