



TEXAS A&M FOREST SERVICE

Reforestation: Overview of Site Preparation Methods

Site preparation is treating land to improve planting conditions, encourage germination of seed or growth of seedlings, and promote survival of the desired species. The method, intensity and timing of site preparation should suit the specific site. Type and intensity of site preparation varies according to site, species, weight of seed crop, ground cover and soils. Contact a professional forester for site specific recommendations. A Texas Forestry Best Management Practices Handbook is available for tips on preventing damage on the site or downstream. For more information, please visit <http://tfsweb.tamu.edu/BMP> or contact your local Texas A&M Forest Service office.

Bedding: Bedding is creating a raised bed of soil on which to plant seedlings. Bedding improves the growing environment on poorly drained soils, reduces plant competition and makes planting easier.

Blading: Blading removes vegetation with a straight blade bulldozer. This method is discouraged because it removes topsoil, damaging the site and increasing erosion.

Chopping (Roller Chopping, Drum Chopping): Chopping is pulling a large, rolling drum chopper over brush and small diameter trees, crushing woody vegetation. It minimizes soil loss and is acceptable on sites with moderate to severe erosion potential. This practice is usually performed in combination with a burning and/or herbicide treatment to control woody competition.

Disking (Harrowing): Sheared and raked sites, pastureland, or sites relatively clear of trees and logging debris, may be disked to loosen soil and expose roots of undesired vegetation. Compacted areas of former cattle grazing can also benefit. Limit disking to slopes of 10% or less.

Herbicides – Chemical Site Prep: Herbicides are site specific based on the species to be controlled, soils, proximity to streams and sensitivity of adjacent vegetation. They may be broadcast by air or on the ground. Chemical Site Prep

is a way of applying herbicides in preparation for planting trees. This method is generally done by way of a helicopter or skidder broadcasting a herbicide mixture to kill woody vegetation and future root sprouts which may prevent planted trees from surviving and growing. Only pesticide applicators certified by the State of Texas should be used when applying herbicides.

Herbicides – Herbaceous Weed Control: This method is typically performed the spring following pine planting. Typically band sprayed in 4-foot swaths over the top of planted pine seedlings, this can also be broadcast or spot sprayed. A possible alternative to spring application is to add a herbicide capable of herbaceous weed control into a Chemical Site Prep mix and broadcasting the fall prior to planting. This can reduce or eliminate the need for a follow-up application in the spring. Only pesticide applicators certified by the State of Texas should be used when applying herbicides.

Herbicides – Timber Stand Improvement, Tree Release: This method involves selecting individual trees or shrubs within a stand and applying herbicides to kill them. Herbicide can be applied by coating the base of the stem, injecting herbicide into the stem, hacking the stem with a hatchet and spraying the cut, or spraying the leaves. Used as site preparation, this involves creating a stand opening allowing the desired trees to be planted or naturally regenerate. Targeting invasive woody species can also create opportunities for native or desired trees to grow. This method can also be applied as a mid-rotation management to encourage the growth of desired trees.

Herbicides – Woody Release: Spraying to control hardwood and shrub vegetation is best done as a Chemical Site Prep before planting. However, the term Woody Release often refers to spraying herbicides to control unwanted woody vegetation after a pine planting. Rates of herbicide

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must be reduced using this method to prevent damage to planted pine. Only pesticide applicators certified by the State of Texas should be used when applying herbicides.

Logging: Logging may expose sufficient mineral soil to enhance natural reforestation of certain species. Prescribed fire may reduce forest litter allowing more natural reforestation to occur.

Mowing (Brush Hogging): Any type of rotary cutting device such as a bush-hog is used to cut standing herbaceous vegetation to a height of less than 3 inches to prepare a site for tree planting.

Mulching (Hydro Ax): Mulching is best applied on highly erosive sites where residual debris from the mulching operation can aid in stabilizing the soil and retain vital nutrients for tree survival and growth.

Prescribed Burning: Prescribed fire is fire applied in a skillful manner to a tract for a specific purpose, under exacting weather conditions. It is an economically sound practice on most pine sites, either alone or in conjunction with some other mechanical or chemical method of site preparation.

Raking (Root Raking): Raking usually follows shearing and is used to push felled vegetation and other debris into piles or windrows. A rake blade is typically placed on a dozer with open slats at the bottom of the blade allowing much of the dirt to remain behind while pushing the debris. Windrows are placed on the contour at intervals of 100-300 feet depending on slope and erodibility of the soil.

3-in-1 Combination Plow (Rip & Bed): A three-in-one combination plow or Savannah plow is pulled behind a large bulldozer with a V-blade to clear debris, subsoil and

prepare beds in one pass. Plowing should occur in June through November and the bed should settle at least three months before planting.

Scalping: Scalping is removing the top layer of soil in a row typically 18-24 inches wide. This leaves a root-free zone, free of white-fringed beetle larvae and competition to allow seedling establishment on pasture land or old crop fields. This can be an alternative to herbicide application; however, it must be carefully done along the contour.

Subsoiling (Ripping): Subsoiling opens up furrows to a depth of 15 inches to increase aeration and water-holding capacity of soils, and breaks up root-constricting hard pans (plow-pans) and compaction in high traffic areas.

Shearing (Shear-only): Shearing prepares sites where vegetation is 4-6 inches diameter (DBH) or larger in size. Blades that are angled or V-shaped are used; serrated edges have the best cutting action. This practice should be conducted along the contour of the land to reduce erosion potential.

Shear and Rake (Shear and Pile): A combination of Shearing and Raking is a very common site preparation practice for planting pine. The logging slash and sheared stumps are typically raked into windrows. The windrows should be placed along the contour and are sometimes burned. This method usually leaves a fairly clean site allowing for possible "wild-land" machine planting of seedlings.

Spot Tillage: Spot tillage creates a favorable micro site for tree establishment and growth by tilling the soil and nearby organic matter to a depth of 24-36 inches. This method has minimal impact on the surrounding area.

