



FORESTRY Leaflets

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FM-6

Site Preparation to Regenerate Trees

Preparing a site for the regeneration of tree seedlings is vital to promote the successful establishment, survival and growth of the next generation of forest on your land. Site preparation ('site prep') often is accomplished with bulldozers, tractors, disks, plows and other specially-built heavy equipment. Site prep achieves three objectives:

- (1) Consolidates leftover logging debris and control undesirable vegetation in a manner that fosters tree growth.
- (2) Tills the soil to improve the root zone conditions for the new tree seedlings.
- (3) Allows sufficient bare soil for the establishment of new trees, either by planting seedlings or natural seeding.

While the costs of paying for site prep may seem high at first, studies have shown that investing in site prep will almost always reap benefits with enhanced tree growth and vigor. Site prep treatments may be used individually or in combination. For example, one site may require a (shear + pile + bed) treatment, while a different site may be prepared by using a combination of (drum chopping + herbicide spraying + burning).

Recommendations for Site Prep

- If site prep will follow a timber harvest, try to have the logging done as cleanly as possible by reducing the amount of leftover standing trees and by keeping stumps low to the ground. It may be worthwhile to work with the logger to see what options are available to improve the 'cleanliness' of the tract during harvest.
- Consult a forester or the N.C. Forest Service to understand what type(s) of site prep may be appropriate.
- Prepare and submit needed documentation if you are seeking cost-share payment assistance. No site prep work can be done until the cost-share payment is authorized.
- Obtain a written contract for any site prep service. Keep records of all work conducted on your land.
- Minimize the movement and loss of topsoil during site prep, and protect water quality. Follow appropriate forestry Best Management Practices (BMPs). ***Topsoil and water quality are your land's most valuable assets!***

Shearing-Piling

- Undesirable standing trees are severed (sheared) by a sharp angled bulldozer blade, often called a KG-blade. Shearing can also sever tall, leftover stumps to clear the way for bedding or planting.
- The severed trees and woody debris may either be piled, or left in place to be burned later.

Raking-Piling

- Woody debris is piled with a large multi-toothed rake blade, mounted on the front of a bulldozer or tractor.
- Raking blades are often not appropriate for cleanly severing or knocking down leftover standing trees. Raking is most effective when all of the woody debris is already on the ground.
- The woody debris is piled, either to be left in place or burned later.

V-Blading

- A V-shaped blade mounted on a bulldozer can be used to push aside woody debris. Once the debris is moved out of the way, the material is usually left where it is.
- The V-blade is not necessarily used to create large debris piles, but instead shoves the debris out of the way so a bedding plow can be pulled within the cleared pathway, or to make room for planting of seedlings.

Drum Chopping

- A large, rolling drum with sharp blades is pulled across the ground surface to chop and crush small- to medium-sized woody vegetation and debris.
- Chopping is often used as a preliminary treatment before burning.
- Treatment or control of hardwood sprouts may be needed after chopping.

Grinding or Mulching

- Large rotating grinding heads mounted on the front of small- to medium-sized tractors or trackhoes chew up and grind vegetation and stumps. The resulting woodchips and mulch are left in place on the site, which reduces the need for debris piles or burning of debris.
- This method may not be appropriate if a large number of tall or large leftover trees are to be eliminated.

Bedding

- Soil is tilled and consolidated into a mounded strip that is called a bed. Beds may range in height from a few inches to nearly 2-feet depending on the soil, moisture and topographic conditions of the site.
- Bedding is a proven site prep method on wet-natured soils since the increased elevation of the raised bed allows the tree seedling roots to remain relatively dry.
- Bedding can loosen the soil and improve the overall rooting conditions for the new tree seedlings, even on sites that are not wet-natured.
- The ground surface must be sufficiently free of woody debris, standing trees and other obstacles so the bedding plow can be pulled in a consistent and uniform manner. Bedding plows are pulled by large tractors or bulldozers. Multiple passes with the bedding plow may be needed on difficult sites.
- Beds should be allowed to settle before planting trees atop them. Settling will minimize air pockets that could dry out seedling roots, especially if a lot of woody debris exists within the beds.

Scalping or Furrowing

- Shallow troughs, furrows or slits are cut along strips into the topsoil to allow room to plant tree seedlings.
- This site prep method is most often used when planting trees on a former pasture or field. Herbicide spraying is usually needed on such sites to control weeds or grass before and/or after trees are planted.

Herbicide Spraying

- Herbicide can control undesirable vegetation that would otherwise choke-out and limit growth of your desired forest tree seedlings. Herbicides are especially useful to control invasive plant species.
- Herbicide can be effective when applied before or after tree planting, depending on the type of chemical.
- This treatment can be a low-impact and low-cost method of site prep on some sites, since it may replace more expensive, soil-disturbing site prep work, particularly if the site was cleanly logged.
- Herbicide treatment often is used in combination with burning to remove excessive vegetation and debris.
- If the landowner hires someone to do the spraying, that applicator must have a herbicide applicator's license.

Burning

- Prescribed burning can remove undesirable vegetation or woody debris, either in a pile or on the ground.
- Refer to the Forestry Leaflet about prescribed burning for more information.



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