BMP 9

Site Preparation for Reforestation

Purpose

Site preparation for reforestation minimizes potential water quality degradation while eliminating or suppressing undesirable vegetation that would otherwise prevent the successful establishment and growth of tree seedlings through competition for sunlight, moisture, and nutrients and facilitates hand or machine planting operations.

Definitions

Site preparation includes treatment of lands and vegetation before artificial or natural regeneration to eliminate or suppress undesirable vegetation and/or to facilitate hand or machine planting operations. This is done to aid in the successful establishment and growth of tree regeneration. Site preparation can be used in fields, in harvested woodlands, in understocked woodlands, or on any other area where establishing a stand of trees or shrubs may be desirable. Mechanical site preparation includes **shearing,** the breaking off of unmerchantable residual trees in order to flatten or reduce the material; **raking,** the dragging of residual tree material; and **drum chopping,** involving the process of crushing debris or breaking it apart in order to flatten residual trees and branches. Site preparation can also include the use of herbicides (see BMP No. 8).

Specifications

Site Preparation Methods

Careful consideration should be given to the type and intensity of site preparation chosen to treat areas scheduled for reforestation to minimize adverse water quality impacts.

Table 9-1 lists site preparation methods, some of which have the potential to impact water quality. The method selected should be based on the amount, size, and type of vegetation present and the slope gradient and erodibility of the soil. The following are recommendations for minimizing potential nonpoint source pollution problems that can be associated with the more common types of site preparation activities:

Table 9-1—Site Preparation Methods Impacting Water Quality

Site Preparation Method	Hazard Level
Herbicide injection	Little or no hazard
Clear felling with chain saw	Little or no hazard
Herbicide spraying	Has potential if BMP No. 8 “Application of Pesticides” not followed
Drum chopping	Medium potential
Drum chopping with burning	Medium potential
Shearing and windrowing	High potential
Disking	High potential

- **Remove as much timber volume** during harvesting as possible to minimize the need for extreme treatments.
- **When possible, confine mechanical methods to slopes less than 30 percent.**
- **Minimizing the creation** of bare soil while achieving the desired results should be a consideration in determining site preparation methods. Favor chemical treatments over mechanical methods on steep

slopes and highly erodible soil. See BMP No. 8 "Application of Pesticides" for cautions when using chemicals.

- **Use low-impact methods to facilitate tree planting when possible** to minimize potential for nonpoint source pollution. Low-impact methods are defined as those practices that cause a minimum of site disturbance. The more extreme site preparation methods are more expensive and increase the potential for erosion, sedimentation of streams, and reduction of site productivity.
- **Use Streamside Management Zones (SMZs)** between streams and site-prepared areas. This will prevent disturbance of channels and stream banks by equipment and prevent soil, logging debris, and organic materialfrom reaching streams. SMZs will also help in maintaining desirable stream water temperatures.
- **Avoid operating heavy equipment during wet weather** to minimize soil disturbance, primarily rutting and compaction. When possible, carry out heavy site preparation during the summer and early fall to avoid wetness caused by winter rains and to allow time for loose soil to settle before planting.

Windrowing

When windrowing is necessary on the site:

- Locate windrows well away from drains to prevent material from being washed into streams.
- Minimize soil incorporated into windrows.
- Space windrows 100 to 300 feet apart on the slope, and construct along the contour.
- Provide occasional breaks in windrows to permit access by fire suppression and other vehicles. This will also prevent damming of water and possible gullying that can occur if water breaks through the windrow.

Regulatory Requirements

(See Appendix A for explanations)

- All silvicultural operations: (410 KAR 5:026, 5:029, 5:030, and 5:031)
- Activities near high-quality waters and outstanding national resources waters: (401 KAR 5:029, 5:030, and 5:031)
- Activities near wild rivers: (KRS 146.200 *et seq.* and 401 KAR 4:100-140)

Summary: AWQA Minimum Requirements for BMP No. 9

The producer should:

- when possible, use only low-impact methods of site preparation during tree planting activities. Low-impact methods are defined as those practices that cause a minimum of site disturbance.