

NATURAL RESOURCES CONSERVATION SERVICE
MONTANA CONSERVATION PRACTICE SPECIFICATION
TREE/SHRUB SITE PREPARATION (ACRE)

CODE 490

DEFINITION: Treatment of areas to improve site conditions for establishing trees and/or shrubs.

PURPOSE(S):

- Encourage natural regeneration of desirable woody plants.
- Permit artificial establishment of woody plants.

SCOPE:

- On all lands needing treatment to establish trees and/or shrubs but current site conditions are not favorable.
- The site is suited to growing woody plants.
- The establishment of natural or planted seedlings would be impaired by existing vegetation or thick forest litter.
- Woody debris prevents access for planting.
- In areas adequately stocked but competing vegetation inhibits further stand development of young plants.

TREE/SHRUB SITE PREPARATION SPECIFICATIONS:

Specifications for applying this practice shall be prepared for each site and recorded using approved specifications sheets, job sheets, and narrative statements in the conservation plan, or other acceptable documentation.

Only treat areas where competing vegetation and/or excessive logging slash or woody debris restricts plant establishment and early growth. Site preparation treatment should benefit seedling establishment and growth for at least three years.

Avoid sites that have had recent application of pesticides that may be harmful to woody species. Check waiting period restrictions and carryover characteristics of pesticides applied to the planting site in the previous one to two years prior to initiating tree/shrub planting.

Site preparation may include the whole site, strips or spots. Individual site preparation for each tree/shrub should provide a minimum 3-foot diameter circle or a minimum 3-foot x 3-foot square, or a 3-foot wide strip at each planting spot (1.5 feet on each side of the planted stock).

The planting area must be free of living sod and competing vegetation before planting.

Specification MT490-2

Tree/shrub site preparation is performed utilizing one or a combination of the following methods:

1. Mechanical method – usually done either with equipment or by hand.
 - a. Tillage – a tillage implement (plow or disc) is used to kill the existing vegetation and maintain the site in a competing vegetation free condition.
 - b. Hand scalping – a hand tool that scrapes/scalps the soil surface at the time of planting. Scalped area is a minimum of three feet in diameter. Remove all vegetation and roots to a three-inch depth. Most suited to sites with less aggressive vegetation.
 - c. Heavy equipment – a bulldozer with a brush rake or a skidder with toothed bucket during slash piling following logging. Scarify the site so that about 30–40 percent of the area has exposed bare mineral soil to a depth of about four inches. Not suited to steep sites (>40% slopes) or sites dominated by rhizomatous shrubs or grasses.

Refer also to the Field Office Technical Guide (FOTG), Section IV– practice standard Brush Management (Code 314) for guidance, when releasing suppressed plants from competing vegetation.

2. Chemical method – competing vegetation must be controlled for establishing new or releasing existing plants. Can be applied either by broadcast application (aerial or ground) or spot application. Spot treatments should kill vegetation in a three-foot diameter area. Select the appropriate herbicide based on the vegetation to be controlled. Follow label instructions. Run WINPST for environmental hazards. Use broadcast treatments for extensive brush fields or rhizomatous grass. Use spot treatment for less aggressive vegetation.
3. Prescribed burning method – used where high volumes of slash and woody debris prevents access or are an obstacle to stand establishment. Burning is also used to reduce thick litter layers to expose the soil and to control tall brush that is competing or hindering stand establishment. Not used on mostly grassy sites but suited to steep sites where mechanical method is not suited. Remove enough debris to ensure 30-40 percent of surface is suitable as a planting site for plant establishment. Competing vegetation is set back at least 50 percent of original density and does not impede plant establishment for three years. Refer to Field Office Technical Guide (FOTG), Section IV– practice standard Prescribed Burning (Code 338). Wildfires may present a window of opportunity for forest habitat establishment.

The following will qualify for proper site preparation:

Tillable sites

1. Destroy competing vegetation through cultivation and/or chemical weed control. Sod and alfalfa should be tilled and not just chemically sprayed.
2. Summer fallow area. One year for cropped areas and two years for sod and alfalfa.
3. A fall-sown crop of small grain may be used where needed to control erosion.

Non-tillable sites

1. Destroy competing vegetation through chemical weed control and/or manually removing vegetation. Kill a vegetative area at least three feet in diameter and plant in the center.

Additional Specifications for Natural Regeneration

For successful natural regeneration, wait for a good seed year before preparing the site. In August, observe seed trees for mature cones. An average of 200 cones per tree constitutes a good seed year. Forest site preparation for natural regeneration is performed immediately after harvest and before September 15 when seed fall begins. In a mixed stand, tailor site preparation to the favored species.

Species requiring bare, mineral soil for natural regeneration:

- Ponderosa pine (*Pinus ponderosa*)
- Douglas-fir (*Pseudotsuga menziesii*)
- Lodgepole pine (*Pinus contorta*)
- Western larch (*Larix occidentalis*)
- Western white pine (*Pinus monticola*)
- Whitebark pine (*Pinus albicaulis*)

Note: Douglas fir sites require a light disturbance only (less than 30 percent).

Additional Specifications for Artificial Regeneration

Identify the forest habitat types that occupy the site. Select species suited for that forest habitat type and capable of establishing at that site. Refer to the Field Office Technical Guide (FOTG), Section II – Forestland Interpretations for suitable species. Select planting stock of an origin that closely matches the planting site.

See the Field Office Technical Guide (FOTG), Section II – Conservation Tree/Shrub Suitability Groups (CTSG) for a listing of conservation trees and shrubs suited to the soils and environmental factors at the site.

Additional Specifications for Releasing Partially Established Stands

Brush or grass competition following seedling establishment may prevent continued establishment. Mechanical and chemical site preparation methods are suited to these situations, not prescribed burning. Limit treatment to stands less than 20 years old and where competition from other vegetation is readily apparent. Do not treat stands where competition is from overstocking. See the Field Office Technical Guide (FOTG), Section IV - practice standard Forest Stand Improvement (Code 666), for treating stands that are overstocked.

TREE/SHRUB SITE PREPARATION OPERATION AND MAINTENANCE:

The following actions shall be carried out to insure that this practice functions as intended throughout its expected life. These actions include normal repetitive activities in the application and use of the practice (operation), and repair and upkeep of the practice (maintenance):

Maintain erosion control measures as necessary to ensure proper function. Access by vehicles during site preparation or after (i.e., before adequate tree and shrub establishment occurs) should be controlled to minimize erosion, compaction and other site impacts.

Control competing vegetation and weeds invading areas disturbed during site preparation.

Site preparation treatments may need to be re-applied if competing vegetation returns before desired plants are adequately established.