

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD**

TREE/SHRUB SITE PREPARATION

(Ac.)

CODE 490

DEFINITION

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

PURPOSE

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

CONDITIONS WHERE PRACTICE APPLIES

On all lands needing treatment to establish trees and/or shrubs.

CRITERIA

General Criteria Applicable to All Purposes

The method, intensity and timing of site preparation will match the limitations of the site, equipment, and the requirements for establishing the desired woody species.

An appropriate site preparation method will be chosen to achieve the intended purpose and to protect desirable vegetation, site and soil conditions. Other complementary practices and measures will be used as necessary to control erosion, runoff, compaction and displacement to acceptable levels.

An appropriate site preparation method will be chosen to protect any desirable vegetation in understocked areas.

Slash and debris shall be removed, treated or eliminated as appropriate. Refer to the standard Forest Slash Treatment, 384.

Remaining slash and debris shall not create habitat for or harbor harmful levels of pests.

Remaining slash and debris shall not hinder needed equipment operations or create an undue fire hazard.

Measures, including the use of equipment, will be implemented to control or protect against locally invasive and noxious species that may arise from site preparation activities.

Evaluate the risk of the pesticides to ground and surface water quality from pest management techniques and pesticides utilizing WIN-PST.

Comply with applicable laws and regulations, including the state's Best Management Practices (BMPs).

CONSIDERATIONS

Impacts on wildlife species, habitat and aesthetics should be considered when selecting site preparation methods.

Particulates, smoke, and/or other air pollutants generated by site preparation activities may have on-site and off-site effects on air quality.

The chosen method should be cost effective and protect items such as wildlife habitat, threatened and endangered species, water resources, springs, seeps, wetlands and other identified unique areas.

Use the practice only on the soils where topography and erosion hazard permit.

Be certain that openings are not a result of restrictive or shallow soils, or of other conditions such as wetness.

Visual quality objectives should be considered

when selecting site preparation methods.

Anticipate possible off-site effects and modify the site preparation design accordingly.

Consider personnel safety during site preparation activities.

Eliminate fire hazard in heavy slash areas. Fell residual trees and snags that do not have a wildlife value.

Old fields should be worked in the fall, or summer-fallowed where heavy sod will compete with seeding. Cultivation methods will vary with soils and topography. Competition for summer moisture by grasses and other plants should be reduced to a minimum consistent with erosion control.

Eliminate undesirable seed sources.

Eliminate natural reproduction of undesirable species until desirable seedlings are well established.

Site Preparation Methods:

Tractor Disking: A tractor drawn cultivator can be used to prepare the site on level ground or slopes up to 35%. This method is effective in controlling herbaceous plants and small shrubs. This method is limited by the presence of large rocks, stumps, downed logs, and large amounts of logging residue.

Tractor Piling and Burning: On level ground or slopes up to 35% crawler tractors equipped with a blade or brush rake are used to pile woody debris to clear and pile brush covered sites. Normally, the debris is piled along the contour to minimize erosion in rows about 4 to 6 feet high and at least 15 feet apart. As little soil as possible should be incorporated in the piles. After properly drying, piles are burned to reduce fire hazards and to minimize habitat for rodents other small animals, which may feed upon tree seedlings. This method is effective in controlling herbaceous plants and small shrubs. This method is limited by the presence of large rocks.

Tractor Crushing and Broadcast Burning: Tractors break down the brush and shrubs by running over it or using anchor chains or cables. Most of the tops are killed, and because they are near the ground, burn almost completely. This method is limited to areas

with less than 35% slopes. Steeper areas can be treated through the use of specialized devices, such as anchor chains with large rolling balls.

Mastication: The use of a mechanical piece of equipment which shreds material (brush, trees, etc) by the use of a rotary head with teeth or chains on slopes up to 40%. The head is normally attached to an excavator.

Broadcast Burning: No preparatory treatment is done other than to install fire lines around the perimeter of the burn area.

Herbicide Application: Vegetation is controlled using various California State Food and Agriculture approved herbicides. If pesticides are used, refer to the standard Pest Management, 595.

Herbicide Application and Broadcast Burning: This technique is normally used when there is a substantial amount of brush. The brush is treated, allowed to die and dry out, and then burned. The herbicide treatment kills the tops of the brush so that they will burn completely. If the species is a sprouting species resprouting may be a problem. This method is an effective means of site preparation of brushfields on steep slopes.

When chemicals restricted by federal, state or local authorities are used clients will have to obtain a written recommendation prepared by a state licensed Pest Control Advisor (PCA) and obtain necessary permits and prior clearance from the County Agricultural Commissioner before the application of the herbicide.

Clients will have to obtain permits and prior clearance from the CalFire (California Department of Forestry and Fire Protection) or responsible fire district and the Air Pollution Control District or Air Quality Management District prior to burning.

Scalping or Hand Scalping: The removal of litter and grass sod in circular patches where the trees are to be planted. It is applicable only where grasses and forbs are the primary competitors, or where the ground is covered with duff and litter. Grasses bordering the scalped areas usually have root systems capable of rapidly depleting the soil moisture stored in the scalped areas.

Planning Considerations for Water Quantity and Quality:

Water Quantity

1. Effects on the water budget, especially on runoff and ground water recharge.
2. Effects of the volume of downstream flow on environmental, social, and economic values.
3. Effects on downstream flows or aquifers that could affect other water uses or users.

Water Quality

1. Effects on erosion and the movement of sediment and soluble and sediment-attached substance that would be carried by runoff.
2. Effects on the movement of dissolved solids to ground water.
3. Effects on wetlands or water-related wildlife habitats.
4. Effects on visual quality of water resources.

Cultural Resources

NRCS policy is to avoid any effect to cultural resources and protect them in their original location. Determine if installation of this practice or associated practices in the plan could have an effect on cultural resources. The National Historic Preservation Act may require consultation with the California State Historic Preservation Officer.

<http://www.nrcs.usda.gov/technical/cultural.html> is the primary website for cultural resources information. The California Environmental Handbook and the California Environmental Assessment Worksheet also provide guidance on how the NRCS must account for cultural resources. The e-Field Office Technical Guide, Section II contains general information, with Web sites for additional information.

Document any specific considerations for cultural resources in the design docket and the Practice Requirements worksheet.

Endangered Species

If during the Environmental Assessment NRCS determines that installation of this practice,

along with any others proposed, will have an effect on any federal or state listed Rare, Threatened or Endangered species or their habitat, NRCS will advise the client of the requirements of the Endangered Species Act and recommend alternative conservation treatments that avoid the adverse effects. Further assistance will be provided only if the client selects one of the alternative conservation treatments for installation; or with concurrence of the client, NRCS initiates consultations concerning the listed species with the U.S. Fish and Wildlife Service, National Marine Fisheries Service and/or California Department of Fish and Game.

PLANS AND SPECIFICATIONS

Specifications for applying this practice and protection of the site shall be prepared and recorded using approved specification sheets, job sheets, technical notes and narrative statements in the conservation plan or other acceptable documentation.

Plans and specifications will address method of preparation; and protection of the site.

Control locally invasive and noxious plants as necessary. If pesticides are used, refer to the standard Pest Management, 595.

Access by vehicles or equipment during or after site preparation shall be controlled to minimize erosion, compaction and other site impacts. Refer to the Standard - 472.

Refer to the standard Prescribed Burning, 338, for slash and debris that will be burned.

OPERATION AND MAINTENANCE

Maintain erosion control measures as necessary and repair 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.

REFERENCES

Reforestation Practices in Southwestern Oregon and Northern California. Forest Research Laboratory, Oregon State University.

