

TREE & SHRUB PRUNING (660)

SPECIFICATION GUIDE FOR PLANNERS

USDA, Natural Resources
Conservation Service—Practice Code
660



Tree/Shrub Pruning (660)

Tree/shrub pruning is a treatment applied to trees and shrubs that involves the removal of selected branches, shoots, or roots. It may also be applied to the removal of all above-ground material where a coppicing technique is being used to renew the growth of trees or shrubs.

PRACTICE INFORMATION

Pruning is used to improve the health, appearance, and value of trees or shrubs by removing damaged, unhealthy, or unsightly portions of the plants. It can also be used to address safety concerns by cutting hazardous branches, or removing fuels that contribute to wildfire risk. Pruning can encourage growth of understory plants by getting sunlight to the forest floor. It may also be used to provide access to a forested stand for other management activities.

Pruning is used on field windbreaks to manage drifting snow, spreading it more evenly over the adjacent fields to allow earlier cropping and improved moisture conditions. Windbreaks may also be pruned to manage odors or to provide air flow that reduces the likelihood of tree diseases.

Timing of pruning is a critical consideration. Many trees and shrubs are best pruned during the dormant season to avoid shock to the plant, and to reduce the likelihood of insect or disease attacks. However, pruning may be necessary following storms to remove damaged and hazardous branches.

The woody material left after pruning trees or shrubs can remain on site and contribute to soil organic matter and plant nutrient supplies. Alternately, it can be removed from the site if it presents a hazard for wildfires, or if it will contribute to outbreaks of harmful insects or plant diseases.

A variety of tree and shrub species may be pruned, but the practice is labor-intensive and can be expensive. Costs and benefits should be evaluated before deciding to prune.

Impacts to wildlife habitat are variable, depending on site conditions, tree or shrub characteristics, and the wildlife species present. Adjust the timing of pruning operations so they do not impact nesting birds or the rearing of young animals.

Common Associated Practices

Tree/Shrub Pruning (660) is applied as a facilitating practice to Alley Cropping (311), Multi-story Cropping (379), Silvopasture Establishment (381), Tree/Shrub Establishment (612), and Windbreak/Shelterbelt Renovation (650). Woody Residue Treatment (384) is a supporting practice used for removing woody material. Forest Stand Improvement (666) is a supporting practice used when entire trees must be cut or killed to control disease or insect pests.

For further information, contact your local NRCS field office.

Existing (Benchmark) Condition:

Check which type of land use or agricultural site on which this practice is to be installed.

The type of benchmark inventory the planner needs to collect is based on the site and purpose for which the planner is applying this practice.

For plant health, documenting the presence or increase risk of forest insects, diseases and pests that that can be treated by pruning. Documentation is done through the Aerial detection surveys and associated maps, soils interpretations, climatic information, damage and defect data collected during forest inventories and/ or the presence of the host species.

Forest pests such as Dwarf mistletoe, White Pine Blister Rust, Red band needle blight, various gall rusts found on branches and some branch and terminal insect damage can be treated through pruning.

Changing plant structure by pruning can increase a plants net available carbohydrates by removing branches that are respiring more than photosynthesizing or increase mast production (fruit, seeds and nuts) by allowing more light to the interior of the crown. Collect data that will document the need for improved forage for a specific wildlife species or suite of species (Xerces Pollinator Assessment or other species specific assessment). This would likely include a vegetation inventory documenting plant condition of target plant species.

Pruning to allow more light to go to the understory vegetation for wildlife habitat or forage for livestock grazing. For this purpose, the planner would document the need to improve wildlife habitat (Bio TN 14, Xerces pollinator assessment or a wildlife species specific assessment) or the need for improved livestock forage quality or quantity (pasture or range condition inventory).

Reducing wildfire hazard through pruning separates ground fuels from tree crowns (ladder fuels). Collecting standard forest inventory data (like stocking, height & crown ratios or height to live crown), understory vegetation data (like species composition, cover and heights), soils and climatic data are needed to establish the presence of a resource concern.

Pruning can reduce energy use during field operations through improving access. When using this purpose, pruning must be a supporting practice in a conservation system. It cannot be a standalone practice. Refer to the main practice of the conservations system for required benchmark condition metrics.

Purposes:

Check all purposes for the treatment of an identified resource concern and meet the participant's objectives.

Desired conditions:

Make sure description of desired conditions is consistent with purpose and is possible to achieve through implementation of 660 Tree & Shrub pruning and its associated practices.

Acres to be Installed and Timing:

Include the number of planned acres to receive pruning. Describe the optimum period for implementing this practice. Also describe limitations on the timing, such as not pruning in the spring due to increase sap flow.

Species and Number of Plants to be Pruned:

Document which species or group of species need to be pruned in order to meet planning criteria for treating the identified resource concern. In addition, estimate approximate number of plants per acre to be pruned.

For Examples:

Pruning to treat Degraded Plant Condition-Wildfire hazard would require pruning "all overstory trees" in order to reduce the ladder fuels and bring the unit up to planning criteria. If the pruning is occurring prior to thinning, then the crop trees are being selected at the time of the pruning, so an approximate number of trees per acre will need to be defined such as 350 trees per acre.

Pruning to reduce the occurrence of Blister rust in Western white pines requires only the Western white pine to be pruned. A forest inventory will be needed to establish approximately how many Western white pines per acre there are and what kind of evaluation each tree will need to determine if pruning is appropriate for that tree.

Perhaps according to your forest inventory only 20% of the Lodgepole pine have Western gall rust. If there are 300 Lodgepole pine per acre then only approximately 60 Lodgepole pine will need to be treated. Plus, only the branches with Western gall rust will need to be treated for each tree.

Pruning Height and/or Minimum and Maximum Amount of Material Removed:

Document either the minimum or minimum & maximum pruning heights **or** the minimum and maximum amount of material to be removed. For most pruning situations, leaving at least a 50% crown ratio is required. Crown ratio is the percent green crown compared to the total height of the tree. Therefore, if the minimum pruning height is 8' and some of the trees are less than 16' tall, they will need at least one more lift to meet the 8' minimum and the additional lift or lifts will be part of the O & M plan for the practice.

For Example:

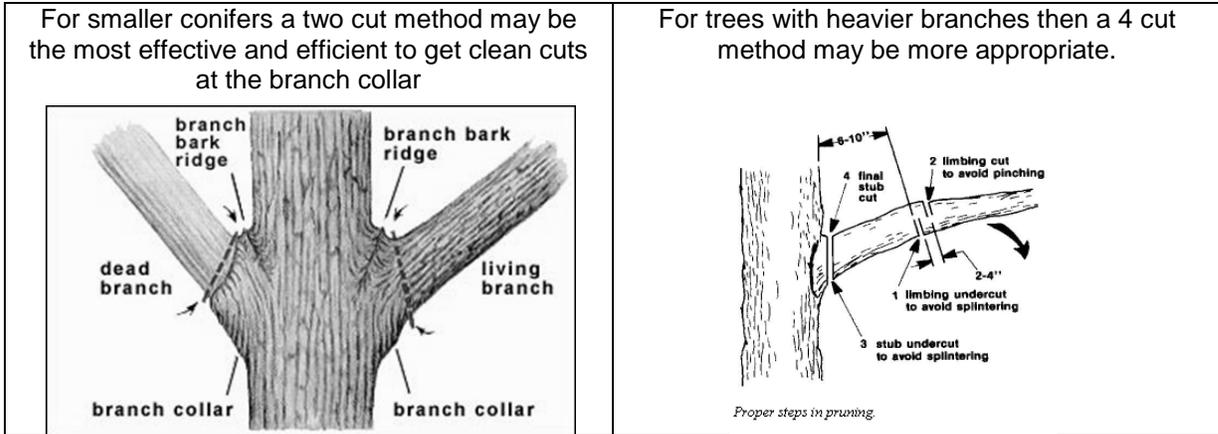
If pruning for wildfire hazard reduction then this section might say: pruning height will be three times the height of the ground fuel with the minimum distance from the ground to the live crown will be a 8' and a maximum of 18', remove all live and dead branches to the pruning height but do not prune a tree to less than a 50% crown ratio. Crown ratio is the percent green crown compared to the total height of the tree.

If pruning Western white pines to reduce mortality from blister rust then this section might say: Evaluate each Western white pine tree. Prune all Western white pine trees that do not have lesions on the bole itself or lesions on a branch that are within 4" of the bole. Remove the lower branches to a 8'-10' pruning height but retaining at least a 50% crown ratio.

If pruning pines to remove western gall rust, then this section might say: remove all galls between the gall and the next branch crotch or fork back towards the tree bole (stem). Leave as much healthy branch as possible.

Pruning Method and Equipment:

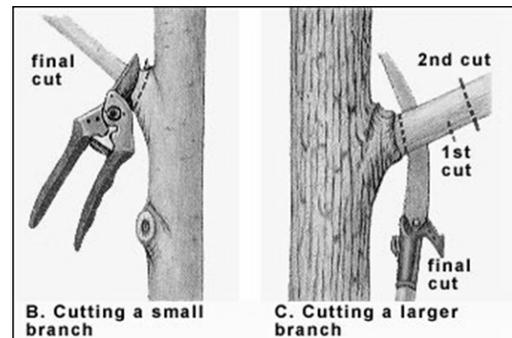
Use proper pruning methods; tools & equipment; and timing of cleaning and sterilization of the tools and equipment based on the site and purpose. Pruning methods may vary depending on the tree species, tree size, branch size and weight.



USDA/USFS NA-FR-01-95, illustrations by Julie Janke, Scientific Illustrator, Afton, Minnesota

It is best to use pruning clippers and saws. Do not use axes or machetes. Chainsaws should be used by skilled operators only.

At a minimum, sharpen, clean and disinfect the tools at least twice a day, for clean cuts and to minimize the spread of pathogens. When targeting specific pathogens, disinfecting after each tree may be necessary.



Additional Treatment Instructions Including Additional Criteria for the purposes of Maintaining Health and Vigor, Improved Soil Quality or Reduced Energy Use:

Include any additional information on the plants to be pruned or the material to be removed that was not covered in the sections above.

For ladder fuel reduction, cut all branches regardless of size. For wood quality considerations, even the little whisker branches should be removed.

For ladder fuel reduction, cut all living and dead branches. Dead branches are ladder fuels and will affect wood quality.

When cutting the branches at the bole of the tree, then cut branch stubs flush with branch collar, without damaging the collar itself for quicker healing and wood quality considerations.

Do not injure the bole of the tree during pruning. Discuss with the producer to determine if climbing spurs are acceptable.

When root pruning, prune outside the drip line of living trees unless root competition with crops or forage areas become too great.

Move pruning debris away from the tree boles to reduce fire hazard and when fire hazard or threats from disease and insects are not limiting then spread pruning debris throughout the stand to protect and improve soil quality.

Associated Practices

Check all of the practices that are part of the conservation system treating the resource concern. Refer to the standards of the other practices to ensure compatibility of specifications.

Operation and Maintenance (O & M) Plan

Fully complete Operation and Maintenance requirements for the practice. Choose the appropriate operation and maintenance requirements for the site and add additional instructions describing the expected protocol and actions to maintain the effectiveness of the practice for the entire practice life. You may remove or not check the other O & M options on the page.

Practice Specifications Design Review and Installation Certification

These are two different signature sections. These sections also documents the planner's Job Approval Authority (JAA) or the TSPs TechReg Category Certification in comparison to the project size (ac). The Planner (or TSP) will sign and date each section as appropriate. If the planner does not have appropriate JAA for the size of the project area by category then a Reviewer with an appropriate amount of JAA will check the planning, implementation requirements and/or practice certification and sign and date under "Checked By" in the appropriate section. It is recommended that both the Reviewer and Planner include their JAA for each section (design review or practice installation and certification).

If the TSP is not certified for a practice, then the TSP may only include the planned amount, the fields (forest stands) where the practice is to be applied, and planned year of application. The TSP may create a draft implementation requirement in order to get and document the experience and product quality so eventually they can get certified for that practice.

There is a section for the client to sign and date. With their signature the client is accepting the specifications (implementation requirements); indicate the planner reviewed the specifications and O & M plan with them; agrees to install according to the specifications and that they are responsible for the permits and notifying the appropriate, governmental agencies or utilities prior to implementation of practice.

Documentation Requirements

The Implementation Requirements (IR) form will be filled out completely. The documentation requirements for the practice are found on the front page of the form in the Index box and under the Practice Installation and Certification section.

Ensure the basic header information is complete: name of the owner/ operator, farm and tract numbers, fields in which the practice will be installed, project name or contract number, and the County or Counties within which the project resides. Mandatory Documentation within the Plan (See Index Box on first page) Check the box of each item that is present within the file and properly completed.

The following additional data/documentation needed for this practice include: benchmark inventory, data summaries and assessment tool results that supports the presence of the resource concern and is consistent with landowner objective. These documents will be in the file or documented within the Assistance notes.

Also include the checkout and practice certification required documentation that is attached and supports the verification of extent, and that the practice was installed according to the standard and specification. Please include clarification notes for the As-Built documentation or within the Assistance notes.

NRCS CONSERVATION PRACTICE EFFECTS - NETWORK DIAGRAM

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