

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE SPECIFICATION GUIDE SHEET**

TREE/SHRUB PRUNING

(ac.)
CODE 660

Pruning recommendations will be site and species specific to match landowner objectives; and will adhere to the Natural Resources Conservation Service (NRCS) conservation practice standard "Tree/Shrub Pruning" (660), in the South Dakota Technical Guide.

Material in this document provides information needed to apply the practice to standards.

Pruning is the precise removal of selected branches from trees. Pruning can be performed to accomplish a variety of purposes. Timing of shearing, branch removal and corrective pruning of high value tree species will be described to accomplish the intended purpose.

Guidelines below address specific purposes.

GENERAL GUIDELINES FOR ALL PRUNING

If possible, prune branches when they are small, less than TWO inches in diameter. Support small branches while cutting.

For larger limbs that cannot be supported by one hand, prune trees according to the following steps to prevent tearing the bark:

Locate the branch bark ridge:

Find **A** (outside edge of branch bark ridge).

Find **B** (swelling where branch meets branch collar). If **B** is difficult to determine drop a line from **A**: the angle **XAC** is equal to the angle **XAB** (see figure 1). Stub the branch to be pruned using a first cut from below and a second cut from above.

Make the final cut on line **AB**.

Do not cut behind the branch bark ridge.

Do not leave stubs.

Do not cut into the branch collar.

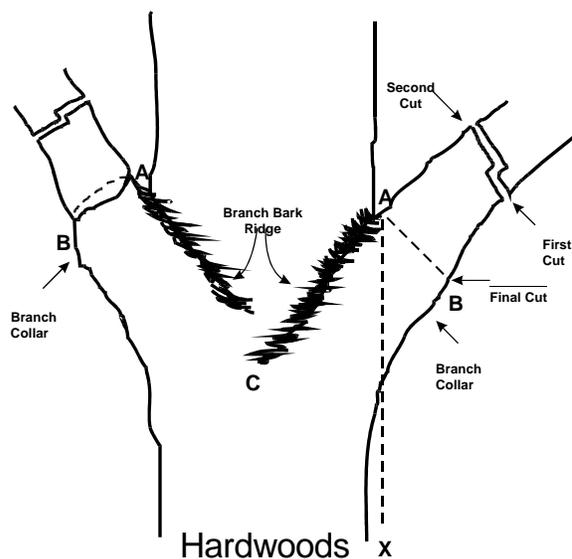
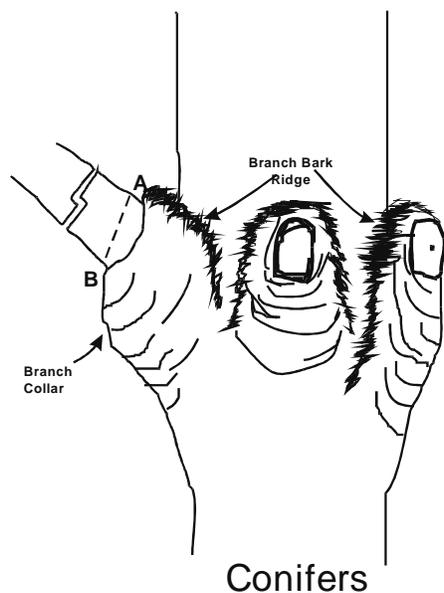


Figure 1. – Hardwood pruning (see figure 2 for conifer pruning).



Use any appropriate, properly sharpened and maintained pruning tools including shears, pole
Figure 2. – Conifer pruning

saws, bow saws, and chain saws. The preferred tools for small and medium sized limbs are a hand or pole saw with a curved blade that cuts on the down stroke. Bow saws and chain saws are more appropriate for larger sized limbs.

It is not necessary to paint or treat pruning cuts. The only benefit of wound dressings is to prevent introduction of Dutch elm disease and oak wilt pathogens when a tree is wounded during a critical time of the year.

Removing too much leaf area could cause undo stress to the plant.

Debris and vegetative material left on the site after treatment will not present an unacceptable fire or pest hazard or interfere with the intended purpose and other management activities.

IMPROVE THE APPEARANCE AND HEALTH OF TREES AND SHRUBS

Ornamental plants

Pruning for health involves removing diseased or insect infested wood, thinning the crown to increase airflow and reduce some pest problems, and removing crossing and rubbing branches. For shade trees and landscape ornamentals, corrective pruning should be started when the plants are young.

Prune trees susceptible to fire blight only during the dormant season.

For hardwood trees and shrubs without showy flowers, prune in the dormant season to maximize wound closure in the growing season after pruning, to discourage excessive sap flow from wounds, and to reduce the chance of transmitting disease. The best time to prune is late fall and winter.

Dead and diseased branches should be removed from trees to enhance beauty and improve general view. Removing broken or damaged limbs encourage wound closure. Light pruning and the removal of dead branches can be done anytime.

When pruning plants with a fungal disease infection, sanitize pruning tools after each cut with either a bleach/water solution (1 part bleach, 9 parts water) or with 70 percent denatured alcohol. Pruning tools should be thoroughly cleaned after each use.

Deciduous shade trees may be pruned at any time for hazard situations or to repair storm damage. The ideal time is during the dormant season before new growth starts.

Avoid pruning elm trees when elm bark beetles are flying as the fresh cuts will attract beetles.

The live crown of any shade tree shall not be decreased to less than 2/3 of the total tree height.

Prune shrubs to improve their shape without changing their natural form, to stimulate blooming, and to improve growth.

Spring flowering shrubs such as lilac, honeysuckle, and dogwood should be pruned immediately after they have bloomed to stimulate wood growth through the current growing season and abundant blooms the following spring.

Summer flowering shrubs should be pruned in the fall when dormant or very early the following spring before growth starts.

Conifers may be pruned any time of the year, but pruning during the dormant season may minimize sap and resin flow from cut branches.

Generally, the smaller a branch is when pruned, the sooner the wound created will seal. For branches two inches in diameter or smaller, prune as needed and necessary. For branches greater than two inches, up to four inches in diameter, think twice before pruning. For branches greater than four inches in diameter, have a real good reason to prune.

Begin pruning early in the life of the tree so pruning wounds are small and growth goes where you want it.

Pruning or shearing for quality Christmas trees

Proper shearing or shaping is the most important cultural practice in Christmas tree production. By trimming the top and branches of a tree to control the shape and density of the foliage, the producer can produce a more marketable product.

Corrective pruning of multiple leaders is done annually until the actual shearing for shape and density is begun.

Begin shearing trees 3 to 5 years after planting (approximately 3 feet in height) and terminal leader growth exceeds 12 inches. Continue shearing annually until the trees are marketed.

Shear pines in late June through the first week in July. Cut the leader back to 10 to 12 inches after the new growth (the candle) is fully elongated but still tender and succulent. Cut at a 45 degree angle to the stem. Cut the laterals back to six to eight inches.

Side shearing of pines should be done to produce a taper of 40 to 90 percent. Taper is the base width in relation to the height.

The shaping and shearing of spruce and fir can be done at any time, but best results will be attained if the shearing is done when the tree is dormant. This would be any time from October 1 to April 1.

Cut the leader as necessary to control height growth to about 10 to 12 inches. Shear just above (1/4 to 3/8 inch) a single bud at a 45 degree angle.

All extra leaders shall be removed.

Cut the lateral branches of the top whorl from 1/2 to 2/3 the length of the leader. Side shearing should be done to obtain a 40 to 70 percent taper.

Basal pruning should be done to form a handle of 8 to 10 inches.

IMPROVE THE QUALITY OF WOOD PRODUCTS

Prune ponderosa pine stands with a site index above 60. Select straight, dominant, or co-dominant trees free of disease, insects, forks, or other defects, and properly spaced.

Begin clear stem pruning when tree diameters are four to eight inches diameter breast height (DBH). Prune 100 to 150 well spaced crop trees per acre; the average spacing will be about 17 to 21 feet. Consider the expense of pruning forest stands. For pruning to be cost effective, it should be done on those trees which have the most vigor, best form, and the ability to produce quality veneer or sawtimber.

From a work efficiency stand point, consider timing of forest pruning to coincide with a thinning, or other timber stand improvement activities managed for maximum growth. Hold crop trees at least 20 years after pruning.

All branches will be removed to a height of at least 9 feet, but not more than 17 feet.

Do not remove more than one-third of the live crown in any single pruning operation. If necessary prune in two stages to reach a 17 foot height. The live crown of any tree shall not be decreased to less than 50 percent of the total tree height.

Pruning can be completed at any time, but avoid pruning ponderosa pine from April 15 through July 15, if possible.

Pruned branches will be scattered away from the base of the trees.

Onsite assistance for pruning high value hardwoods such as black walnut is available from the service forester, South Dakota Department of Agriculture, Division of Resource Conservation and Forestry.

REDUCE FIRE AND/OR SAFETY HAZARDS

Pruning for safety involves removing branches that could fall and cause injury or property damage, trimming branches that interfere with lines of sight on streets and driveways, and removing branches that grow into utility lines. Limbs shall be pruned to a height of 8 to 12 feet to facilitate movement.

Do not prune trees touching or near utility lines. Contact the appropriate local utility for assistance.

For hazardous fuel reduction, prune trees to three times the height of the surrounding shrubs.

ADJUST THE FOLIAGE AND BRANCHING DENSITY FOR WIND AND SNOW CONTROL, ACCESS CONTROL, AND VISUAL SCREENS

Pruning of trees will be used to remove diseased branches or alter the density of the planting.

- Pruning to reduce windbreak density can be done in two ways.

The first method involves removing all limbs from all trees to a certain height, usually 3-5 feet above the ground. This type of pruning is usually done on field windbreaks to address snow distribution. After a field windbreak has been pruned in this manner, the downwind snowdrift will usually be wider, shallower, and farther away from the tree row. The down side to this method is that the protection to the crop during the growing season will be reduced, especially near the tree row. See Figure 2 for the effects of this style of pruning on snow deposition.

The second method involves removing selected limbs throughout the canopy to reduce overall density of the windbreak to a desired level. This method will look more natural and would be

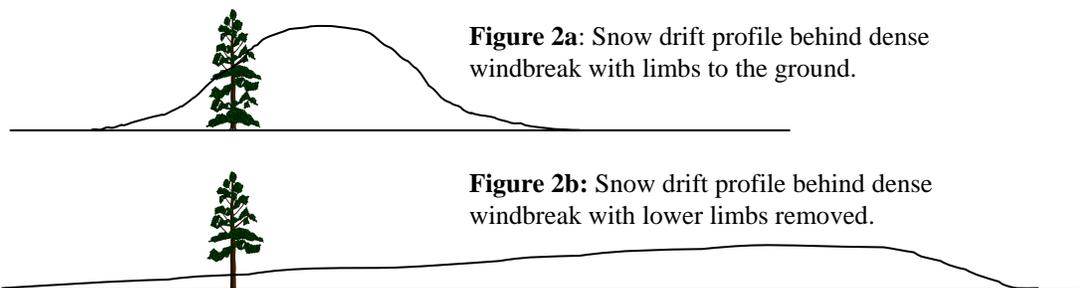


Figure 2a: Snow drift profile behind dense windbreak with limbs to the ground.

Figure 2b: Snow drift profile behind dense windbreak with lower limbs removed.

appropriate where windbreaks are protecting specialty crops that need the proper mix of airflow and protection.

The zone of protection downwind from a windbreak pruned in this manner would be more uniform than for a windbreak pruned from the bottom up, though snow distribution patterns will be similar.

Best time for either type of pruning is when trees are dormant. (October to March)

Pruning to correct damage or to encourage proper tree form is probably best done whenever the need is noticed. Even though there may be a "best" time to prune, it is usually best to correct problems immediately.

Early spring after snow melt is a good time to inspect windbreaks for damaged limbs, double leaders, and other deformities caused by weather or animals. Using the proper pruning techniques, prune off the damaged parts in a way that encourages rapid callus formation and proper growth forms.

Pruning to a single leader at the correct time (when limbs are less than one inch in diameter) will result in taller trees that are more wind hardy and will result in fewer limbs falling into adjacent fields.

Windbreaks should be examined every year or after every major storm event to determine pruning needs.