



**NATURAL RESOURCES CONSERVATION SERVICE**  
**CONSERVATION PRACTICE STANDARD**  
**TREE/SHRUB PRUNING**  
**CODE 660**  
**(AC.)**

**DEFINITION**

The removal of all or parts of selected branches, leaders, or roots from trees and shrubs.

**PURPOSE**

This practice is applied to support one or more of the following purposes:

- Maintain or improve plant productivity, health and vigor, and/or reduce excessive plant pest pressure.
- Develop desired plant structure, foliage or branching density, or rooting length.
- Improve the composition and vigor of understory plants.
- Improve the appearance of trees or shrubs, e.g., ornamental plants and Christmas trees.
- Maintain or improve soil quality and organic matter content.
- Improve the quality of wood products.
- Improve the production of plant products, e.g., nuts, fruits, boughs and tips.
- Reduce wildfire and/or safety hazards.
- Reduce energy use during field operations.

**CONDITIONS WHERE PRACTICE APPLIES**

This practice applies on any area with trees or shrubs.

**CRITERIA**

**General Criteria Applicable to All Purposes**

Maintain the health and vigor of trees and shrubs by removing the minimum amount of living biomass required to achieve the pruning objective. Maintain recommended crown ratios for the treated species.

Use proper pruning methods, techniques and timing for each species to achieve the pruning objective.

Use proper pruning procedure(s) and tools to minimize stress and damage to the residual tree or shrub.

Time all pruning and shearing activities to minimize negative impacts on the site, soils, and vegetation.

Do not create conditions (e.g., sap flow from fresh cuts) that will attract detrimental insects or increase the potential for disease.

Schedule the timing of pruning and shearing operations to minimize disturbance to seasonal wildlife activities.

Do not paint or treat pruning cuts, or “top” (pollard) trees or shrubs unless specifically recommended for the intended purpose as described by the International Society of Arboriculture.

Sanitize all equipment after pruning a forest unit, even if there is no apparent disease.

#### **Additional Criteria for Maintaining Health and Vigor**

When pruning diseased wood, disinfect pruning and shearing tools as needed to minimize the spread of pathogens.

When root pruning for maintenance or renovation of existing trees, prune outside the tree drip-line (unless root competition with adjacent crop or forage areas becomes too great) and to a depth appropriate for the species and site.

For affected species and sites, limit the spread of root-graft transmitted diseases by pruning roots at distances recommended for the species, site, and size of the tree.

#### **Additional Criteria to Maintain or Improve Soil Quality**

Do not burn vegetative residues except where wildfire hazard or threats from diseases and insects are of concern, or other management objectives are best achieved through burning.

Distribute residue throughout the site; however, moving residues away from stems of trees or shrubs is acceptable. Residues may be chipped or mulched to speed incorporation into the soil.

#### **Additional Criteria for Reducing Wildfire and/or Safety Hazards**

When pruning is used to reduce wildfire hazard, or is conducted for other purposes in areas that are susceptible to wildfire, treat woody residue to reduce wildfire risk. Use WI NRCS Conservation Practice Standard (WI NRCS CPS), Woody Residue Treatment (Code 384).

When pruning for wildfire hazard reduction, the final pruned branch height (at the bole) may need to be higher with trees whose branches droop, to achieve the desired separation between the tree crown and ground vegetation.

#### **Additional Criteria to Reduce Energy Use**

Where alternative pruning methods are available, reduce the total energy consumption associated with pruning by using energy-efficient and cost-effective methods.

#### **Pruning Criteria to Produce Clear Logs and/or to Address Insect and Disease Concerns**

It is best to follow advice of professional foresters in pruning operations. The following rules generally apply to Wisconsin conditions:

1. Soil Site - Limit pruning to soils with a Site Index of 55 or more. See NRCS Soil Interpretation Record or soil survey for Site Index values.
2. Age - First pruning should be done following the first thinning, which will vary with site and species from age 15 to 40 years. Some references suggest pruning all trees to 6 feet height for easy access and fire prevention.  
Corrective pruning on hardwoods may begin as early as 5 to 10 years of age.
3. Trees to Prune - Select from 60 to 150 crop trees per acre. Confine crop trees pruned in plantations to alternate rows or every third row that will not be cut during future thinning operations.

4. Height to Prune - Prune to an 18-foot height to provide a clear 16-foot butt log. This height may be reached in one or more prunings depending on the height to the live crown of the trees.
5. Amount of Live Crown to Remove - Remove no more than one-third of the live crown in a single operation.
6. Time of Year - Consult a professional forester. Most pruning should be completed during late fall and winter to reduce danger of insect and disease damage.
7. Border - Leave an unpruned border around the edge of plantations for wind protection and wildlife benefit.

### **Pruning Criteria to Shape Christmas Trees**

The pruning of Christmas trees, often called “sheering” or “shaping” is a highly specialized procedure. Local guidelines are normally well established by commercial growers. The following are general guidelines that should be reinforced by local experience.

#### 1. Pines

- A. Time - In early summer, June 15 to August 15, depending on location. Prune when growth is nearly completed and while shoots are still soft and succulent enough to set buds.
- B. Age - Begin shearing when pines are three to four years old.
- C. Method - First year, remove deformities and multiple shoots.
  1. Cut back terminal shoot to 12 to 14 inches.
  2. Cut back laterals of terminal whorl to five inches shorter than terminal.
  3. Going around tree, cut back all laterals to conical shape.
  4. Confine cuts to first year wood, if possible. If necessary to cut older wood, cut flush with side branch.
  5. In subsequent years, follow the same method being careful to maintain a dominant terminal.
  6. Remove bottom whorl to provide “handle.”

#### 2. Spruce and Fir

- A. Time - Spruce and fir can be sheared at any season, but dormant shearing is preferred because of cooler working conditions, fewer insects, better distribution of shearing workload, new spring growth covers the wound, and the resulting improved flow of nutrients to the remaining buds results in a more vigorous tree.
- B. Age - Begin shearing spruce and fir at age three to five years depending on size and growth rate.
- C. Method - Shear for conical shape and dense foliage. Cut back terminal to 8 to 12 inches with cut above a strong, live single bud that will become terminal. Avoid double buds that lead to crotch formation. Cut back laterals to conical shape. Remove lower limbs to form “handle.” Follow the same procedure annually with emphasis on keeping a dominant terminal.

## CONSIDERATIONS

Removing live branches and foliage decreases tree and shrub energy reserves and ability to photosynthesize. Improper pruning methods that remove too much material, or lead to structural defects and breakage, can impact the health and vigor of trees and shrubs.

Consider the potential impacts of planned vegetative residue treatment methods on soil, water, animal, plant, energy, and air resources (e.g., retaining residues on site vs. removal or burning). Soil quality is improved through inputs of vegetative residue that supply nutrients and organic matter.

If needed, treat vegetative residue to limit threats from diseases or insects, maintain operational capacity, or to speed residue incorporation into soils. Use WI NRCS CPS, Woody Residue Treatment (Code 384).

Consider estimated costs and projected economic benefits of pruning for production of knot-free wood or other specialized forest products.

When pruning for disease or pest control (e.g., mistletoe, blister rust), consider existing tree-to-tree spacing, vertical tree structure, degree of infection, stand age, and site quality. If it is necessary to cut or kill entire trees to limit disease or pest damage, use WI NRCS CPS, Forest Stand Improvement (Code 666).

For species susceptible to sun scald, consider possible damage that may occur to a newly-exposed tree bole or shrub, especially on south-facing slopes.

Consider how to use branches and other plant parts removed during pruning as special forest products, or for other purposes.

## PLANS AND SPECIFICATIONS

Prepare plans and specifications for applying this practice, including design and installation requirements for achieving the intended purpose. Locate the area to be pruned on the conservation plan map, and document the purpose(s) for pruning in the conservation plan.

At a minimum, specifications shall include:

- Location,
- Objective(s) for pruning,
- Treatment method by species or vegetation type,
- Number of trees/shrubs per acre to be treated,
- Minimum and maximum amount of live branch and foliage to be cut or removed,
- Timing relative to considerations for disease, insects, and wildlife impacts,
- Mitigation measures, if needed, to reduce wildfire hazard or the potential for disease and insect pests.

## OPERATION AND MAINTENANCE

Periodically inspect plant condition and conduct additional treatment or mitigation if needed.

Control locally invasive and noxious plants that may establish due to increased light penetration.

## REFERENCES

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