

Definition

Tree pruning is the removal of all or parts of selected branches or leaders from trees and shrubs. Pruning is done to improve the appearance of trees or shrubs, the quality of wood products, the production of plant products, (e.g., nuts, fruits, boughs and tips), and/or the growth and vigor of understory plant, and to reduce fire and/or safety hazards and adjust the foliage and branching density for other specific intents, such as noise abatement, access control, and visual screens.

Commercial Timber

- ◆ Species to Prune - Pruning may be practiced on nearly all species. Normally, pruning is only recommended for high-value species.
- ◆ Trees to Prune - Pruning should be performed only on the better dominant and codominant trees in the stand. Any tree which is malformed, damaged or diseased should be removed during an intermediate cutting.
- ◆ Size of Trees to Prune and Timing - Begin when trees reach 3 inches DBH. Pruning should be done during the dormant season, generally late October through March. Black walnut can fork and become excessively crooked, so it may be necessary to begin at the age of 2 to 3 years on this species.
- ◆ Height to Prune - For the purpose of producing a clear, knot-free product, prune every 4-6 years to eventually attain a clear bole height of 18 feet. Each pruning should never be more than two-thirds of the total tree height.
- ◆ Number to Prune:
 - Where small poles are the objective: Prune no more than 300 trees per acre. Pruned trees should be straight, thrifty, and free from defects. They should be spaced about 12 to 14 ft. apart.
 - Where quality sawlogs are the objective: Prune about 100 to 125 quality trees per acre. Potential sawlog trees should have an average spacing of about 20 feet.

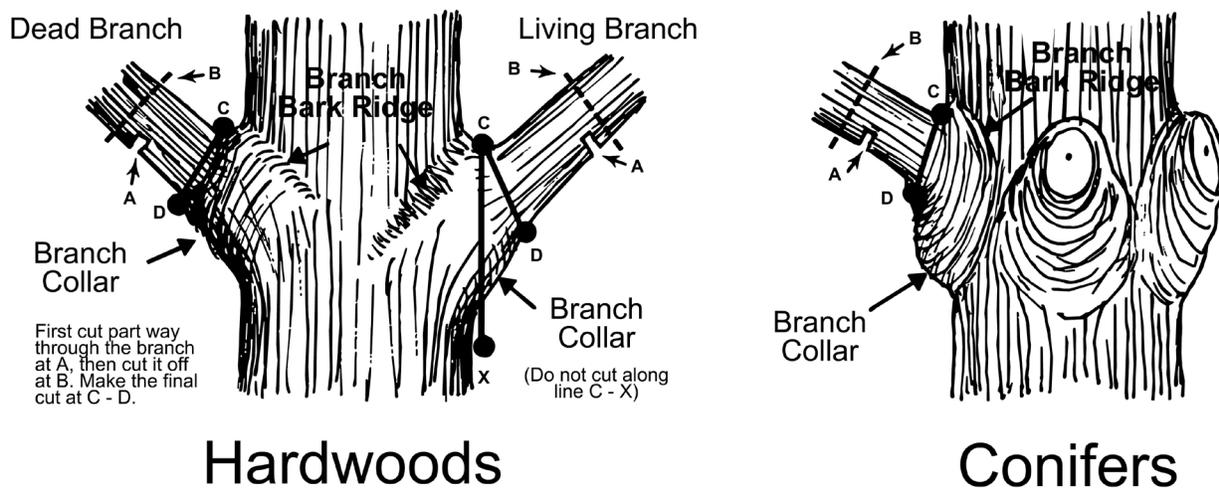
- ◆ Pruning Method - the following pruning methods may be used:

Pruning Method	Time	Pruning DBH (in.)	Approx. Tree Ht. (ft.)	Pruning Height (ft.)
Three Step	1 st	3-4	15-20	7-10
	2 nd	5-6	25-30	12-15
	3 rd	6-8	35-40	17-20
Two Step	1 st	3-5	15-25	7-12
	2 nd	5-8	25-40	12-20
One Step	1 st	5-8	25-40	12-20

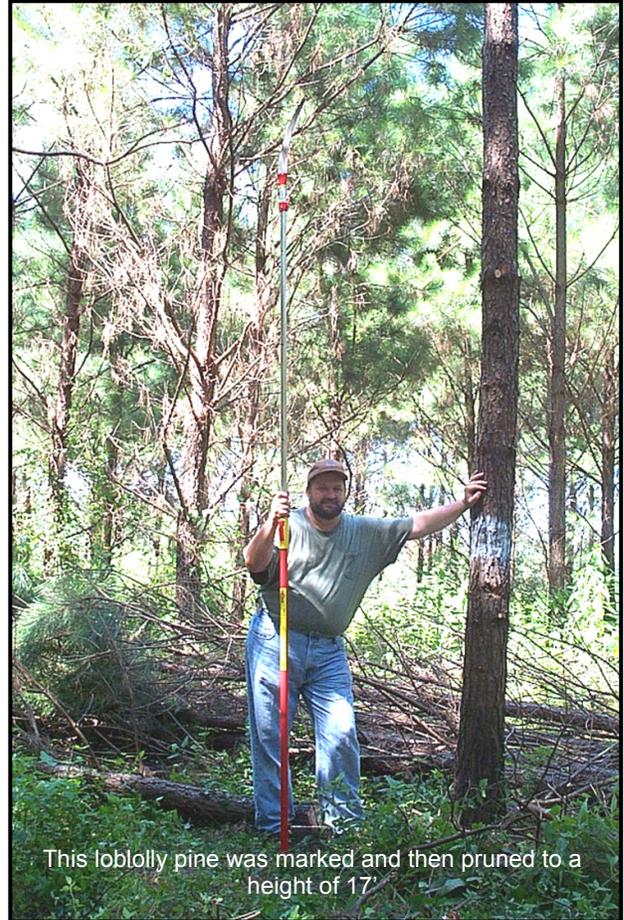
- ◆ Pruning Techniques:

- Use a pruning saw, never an ax.
- Use the "pull-stroke" method instead of the conventional "push-and-pull" method.
- Dead branches may be pruned during any season. Green branches should be pruned during winter when trees are dormant and the disease and insect hazard is lower. Do not prune during the growing season.
- Do not cut flush with the tree trunk. First, locate the branch bark ridge and make pruning cuts on the outside of the branch collar. Do not leave branch stubs, living or dead. See sketch below.

Proper Pruning Principles



- ❑ Cut small branches from the top. Very large branches may need an undercut prior to overcut to prevent tearing of bark or splitting of limbs.
- ❑ For best results, prune only half the height of the tree. Never prune more than two-thirds of the total height.
- ❑ When possible stand up wind to avoid possible eye injury from sawdust.
- ❑ When using a series of extension lengths on saws, use a sufficient number to stand clear of falling limbs.



Marketing Considerations

The landowner may obtain a letter from the county agent, county forester, or NRCS district conservationist stating the satisfactory completion of the pruning practice and date the practice was completed. The letter will provide some assurance to the buyer that a certain amount of clear, knot-free wood will be produced. Other documentation may be helpful as well, such as: digital pictures and average diameter of the stand during the practice. The return on the investment may be realized if the timber grower receives a premium price in future timber sales.

Ornamental Species and Pruning for Recreation, Landscaping, and Aesthetics

Trees on recreational areas and near buildings may need pruning regardless of their size. Trees which have either recreational or aesthetic value may be pruned in the same manner as those pruned for commercial wood products. The height to prune is generally the height necessary to allow pedestrian passage, vehicular traffic, and save visibility.

Deciduous trees, except elms, birch, dogwood, and maples may be pruned at any time. Spring pruning will allow for faster healing of the wound.

Elms, birch, dogwood and maples should be pruned after full leaf development. Pruning in late winter or early spring causes profuse bleeding.

Pruning of evergreens can be done at any time.

Christmas Trees

Very few trees grow naturally into good Christmas tree form. To develop the desired taper, the tree must be sheared and pruned. Pruning is the removal of undesirable wood or branches older than one year, such as diseased, dead, or damaged wood or forks. Shearing is cutting back the current year's growth of the terminal and lateral branches. Christmas trees should be pruned the first year after planting to remove forked tops. The lower limbs up to 6 inches may be removed in the later pruning (s) to provide a handle for the tree.

Shearing should begin the second or third year, depending on the species. Trees should be sheared once or twice each year according to the species. Acceptable standards for taper range from 40 to 90 percent.

REFERENCES

National Arbor Day Foundation "Proper Pruning" diagram

Bennett, Frank A. *"The Effect of Pruning on the Height and Diameter Growth of Planted Slash Pine"* Journal of Forestry. Vol. 53, No. 9, September 1955.

Shigo, Alex L. *"The Right Treatments for Troubled Trees"* American Forests. February 1984.